

The Syntax of German-English Code-switching

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Ph.D. LINGUISTICS

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Acknowledgements

I would like to thank the following people for their contribution to this thesis. My Doktorvater, Dick Hudson, guided me with a lot of patience. His ideas on language and conceptual knowledge have become my theoretical home within linguistics during the last eight years. I thank the LIPPS (Language Interaction in Plurilingual and Plurilectal Speakers) Group for setting up the Language Interaction Data Exchange System and for many enjoyable and stimulating meetings. I am very grateful to Claire Jamieson from the UCL Dyslexia Support Center for proof-reading most of this thesis, Ali Judd for feedback on the statistics, Maggie Brueckner for transcribing two files, and Mary MacWhinney for linking the transcriptions to the audio files. Other people who deserve special thanks include Dr. Zerner, Andreas Netzer, Lois Boumans, Penelope Gardner-Chloros, Mark Sebba, Jeannine Treffers-Daller, Martin Durrell, Randall Jones, Brian MacWhinney, April McMahon, Wolfgang Dressler, Ruth Wodak and Zak Waterman. I'm grateful to my colleagues and friends at UCL, and the Universities of Vienna, Lancaster, Strathclyde and Roehampton for the many fruitful discussions about linguistics, but above all for making these institutions such pleasant places to work. I would furthermore like to express my thanks to the Austrian Bundesministerium für Wissenschaft und Kunst and the Universität Wien for several Forschungs- and Auslandsstipendien. I am deeply touched by the amount of personal support and kindness that was shown to me by my friends, especially during the last year. Thanks to David for sticking it out with me. Last but definitely not least, I want to thank my parents and families for encouraging my natural curiosity and for keeping me going during not so good times.

I would like to dedicate this thesis to everybody who had to leave their home to escape the consequences of Fascist ideologies.

London, October 2004

The Syntax of German-English Code-switching

0. Introduction	7
1. Sociolinguistic background	11
1.1. The sociolinguistic situation in the country of origin	
1.1.1. Historical, demographic and cultural background	
1.1.2. (Socio)linguistic background	
1.1.3. Conditions of Emigration and Immigration	
1.2. The nature and distribution of the speech community in Great Britain	
1.3. Language change and shift	
1.4. Language support in the community	
1.5. The role of education in language reproduction	
1.6. Language use in the community at the time of data collection	
2. The data	39
2.1. Sampling	
2.2. The Informants	
2.3. Ethical issues	
2.4. Data collection	
2.5. Informants' two codes	
2.5.1. German	
2.5.2. English	
2.6. Factors influencing language choice in the audio data	
2.7. Language use in the fully transcribed data	
3. LIPPS/LIDES: transcription, coding and automatic analysis of the data	66
3.1. The Language Interaction in Plurilingual and Plurilectal Speakers (LIPPS) group	
3.2. The Language Interaction Data Exchange System (LIDES)	
3.3. LIDES and CHILDES (The Child Language Data Exchange System)	
3.4. Transcribing and coding my data in the LIDES/CHAT format	
3.5. Automatic analysis of CHAT/LIDES transcribed data (CLAN)	
3.5.1. CHECK	
3.5.2. FREQ	
3.5.4. COMBO	

3.5.5. Other useful CLAN programmes

3.5.5. MLU and MLT

3.5.6. FLO

3.6. Evaluation of LIDES and CHILDES

4. Syntactic code-switching research: an overview88

4.1. The Free Morpheme and Equivalence Constraints (Sankoff and Poplack 1981)

4.2. The Subcategorisation and Free Morpheme Constraints
(Bentahila and Davies 1983)

4.3. The Phrase-structure Congruence Constraint (Woolford 1983)

4.4. The Constraint on Colsed-Class Itlems (Joshi 1985)

4.5. The Government Constraint (Di Sciullo, Muysken and Singh 1986)

4.6. The Functional Head Constraint and the Word Order Grammar Integrity Corollary
(Belazi, Rubin and Torribo 1994)

4.7. The Matrix Language Frame Model (Myers-Scotton 1993)

4.8. A Typology of Code-mixing (Muysken 2000)

4.8.1. Insertion

4.8.2. Alternation

4.8.3. Congruent Lexicalization

4.9. Summary

5. Word Grammar114

5.1. Locating Word Grammar

5.2. The name

5.3. Language as a network

5.4. Default inheritance

5.5. Summary of the main distinctive ideas

5.6. Levels of language

5.6.1 Morphology

5.6.2. Syntax

5.6.3. Notational summary

5.7. Sociolinguistics

6. Quantitative analysis143

6.1. The corpora the quantitative analysis is carried out on

6.2. Frequency data

6.2.1. Distribution of languages in the four corpora

6.2.2. Distribution of languages by speakers

6.2.3. Frequency of mixed utterances

6.2.4. Frequency of code-switches

6.3. Quantitative analysis of grammatical relations

6.3.1. Distribution of languages in grammatical relations

6.3.2. Distance & dependency

6.3.3. Exploring other options

6.3.3.1. Adjacency (re-visited)

6.3.3.2. Language of the head

6.3.3.3. Direction of dependency

6.3.3.4 Adjacency in monolingual and mixed utterances

6.4. Quantitative analysis of grammatical functions

6.4.1. Monolingual dependency relations

6.4.2. Comparison of monolingual and mixed dependencies

6.4.2.1. Monolingual German vs. mixed with an German head

6.4.2.2. Monolingual English vs. mixed with an English head

6.4.4. Comparison of mixed dependency relations

6.5. Convergence

6.6. Comparison of word-classes

7.7. Syntactically unrelated discourse elements

7. Qualitative analysis189

7.1. Code-switching at clause boundaries: the case of *because* and *weil*

7.1.1. Word order rules for English and German finite verbs

7.1.2. The empirical issues

7.1.2.1. Asymmetry between conjunctions of reason

7.1.2.2. Verb second word order after *because* and *weil*

7.1.3. Possible explanations

7.1.3.1. for the asymmetry of *because* and *weil*

7.1.3.2. V2 after *because* and *weil*

7.1.4. Conclusion

7.2. Gender Assignment

7.2.1. The gender systems of English and German

7.2.1.1. English	
7.2.1.2. German	
7.2.3. Gender assignment to borrowings and loanwords	
7.2.4. The assumptions	
7.2.5. Empirical analysis	
7.2.5.1. Semantic assignment principles	
7.2.5.2. Morphological assignment principles	
7.2.5.3. Phonological assignment principles	
7.2.5.4. Special assignment principles	
8. Conclusion	231
Bibliography	237
Appendices	244
Appendix I: Sociolinguistic information about the target community	
Appendix II: Tables for section 6.4.	
Appendix III: CHAT/LIDES Symbol Summary	

0. Introduction

This thesis is about how words and (word-)forms from German and English interact with each other and with same-language elements. That is, it is a comparison of the syntax of bilingual speakers' monolingual and intra-sententially code-switched utterances. It is based on the assumption that each word in a syntactic dependency relation must satisfy the constraints imposed on it by its own language. This hypothesis is presumed to hold for monolingual and mixed dependencies alike.

I use the terms code-switching and **code-mixing** fairly indiscriminately to refer to all cases where lexical items and grammatical features from two languages occur in one sentence. This use of terminology is unlike Muysken's (2000), who reserves **code-switching** for the rapid succession of several languages in a single speech event. This is warranted, first by that fact that most intra-sententially mixed utterances in my corpus ARE a rapid succession of German and English elements within one utterance. Second, it is a consequence of the syntactic theory adopted for the analysis of the examples, Word Grammar (WG, see Chapter 5). Insertion, the patterns of intra-sentential code-mixing Muysken contrasts code-switching/alternation with, does not make sense within a dependency framework. A dependency grammar does not generate a single-language matrix structure into which insertion of lexical and/or phrasal categories from another language can take place. If there is a code-switch, the language alternates between dependency-related words (for a more detailed discussion of this controversial issue see Chapters 4 and 5). For these two reasons code-switching and code-mixing are used fairly indiscriminately in this thesis, with code-mixing informally serving as an umbrella term including other language contact phenomena. I furthermore do not distinguish between code-switches and **borrowings**. It seems impossible to differentiate code-mixing and borrowing, both at a theoretical and at a practical level. Therefore the two are not considered as two fundamentally different language contact phenomena (for a more detailed discussion of the point at issue see Chapter 8 Section 4).

This thesis is an empirical study. The justification for analysing a particular expression as an instance of x is ultimately empirical, i.e. it resides in the fact that if we posit that a particular expression serves as an x in a given construction, we can begin to make sense of various aspects of the syntax of the construction. The analysis of the data, however, is carried out within a particular syntactic framework, i.e. Word Grammar,

and the theory will always influence the interpretation of the data. That an insertional view of code-mixing makes little sense in a dependency analysis is an example of this. In general, however, I use notions that are as little theory specific as possible. The null hypothesis this thesis is based on is formulated descriptively within Word Grammar (and not derived from an assumption behind the theory). Research being conducted in different theoretical frameworks, however, does not preclude similar hypotheses and or results. The affinity of the hypothesis proposed here with Bentahila & Davies' (1983) subcategorisation constraint (formulated within an early X-bar framework) illustrates this. Due to the different syntactic theories employed, however, predictions are made on different levels in the two frameworks.

This study is furthermore empirical because it is based on a corpus of monolingual and code-mixed speech produced by German/English bilinguals. A corpus is an essential test for all hypotheses and models. My approach to the data is also "bottom-up" in that it studies the language use of individuals and a small network of speakers and then compares the generalisations that can be made about their language use with findings from other studies of monolingual and bilingual speech. The ultimate aim, of course, would be for findings originating in code-mixing research to contribute insights to general linguistics. This, however, seems to be some way off (see Section 6.3 for why this may be the case).

The main chapter of this thesis is a quantitative analysis of monolingual German and English utterances. Corpora from a wide variety of language pairs and bilingual communities have shown that none of the syntactic constraints on code-switching proposed so far are able to account for the code-switching patterns emerging from natural speech data. The evidence collected on mixing two or more grammars to date seems to point towards a probabilistic perspective. This is what I offer in this thesis. The proposed constraints are clearly not universal either. This, however, does not necessarily mean that they are parochial. I will show that mixing patterns that are frequent in my data are also prevalent in other bilingual communities. The closest this thesis probably comes to any earlier study of the syntax of code-mixing is Sankoff and Poplack (1981). In this paper Sankoff and Poplack calculate the frequencies of different syntactic rules in monolingual Spanish and English grammars and the relative frequency of potential switch sites, and then compare them with the actual switch frequencies at these switch sites as observed in their mixed data. The emphasis in this thesis is less on switch points than on syntactic relations but otherwise the two approaches are comparable.

The two qualitative studies presented in this thesis are also supplemented with quantitative data. The qualitative analyses (Chapter 7), however, lead more in the direction of a congruence approach to the syntax of code-switching (Sebba 1998). The idea that items from each language which are equivalent to each other facilitate mixing is not new (Lehtinen 1966; Clyne 1967, 1987). Much recent research explores the role(s) congruence (Myers-Scotton & Jake 1995) and/or categorial equivalence (Muysken 2000, Treffers-Daller 1994) play in facilitating mixing. Although I deliberately chose to analyse two areas of syntax in which the two monolingual grammars involved in mixing differ, the analysis reveals that competent bilinguals identify exceptional cases of categorial equivalence at the syntax-pragmatics interface (Section 7.1), and the most robust gender assignment rules which are operative in both languages (Section 7.2) to switch languages in mid-sentence.

Chapter 1 describes the historical, cultural and linguistic background of the Austrian Jewish émigré community in London and the factors that gave rise to bilingualism and code-mixing. The second chapter deals with the informants and audio data the linguistic study is based on. It reports on the sampling for the informants, discusses ethical issues and gives details of the actual data collection before it focuses on the informants' two codes, factors influencing language choice, and language use in the transcribed data. As the system I used for transcribing, coding, analysing and storing my data is a relatively recent development in code-mixing research, I dedicate a separate chapter (Chapter 3) to it. Chapter 4 reviews the dominant literature produced on grammatical aspects of code-mixing from the 1980s onwards. It first discusses the syntactic constraints proposed for intra-sentential code-switching, before it presents the Matrix Language Frame Model (Myers-Scotton 1993) and the typology of code-mixing proposed by Muysken (2000). Word Grammar, the syntactic model used for the structural analysis of my German/English data, is introduced in Chapter 5. This chapter also outlines the perceived advantages of this theory over other frameworks and explores ways in which assumptions behind Word Grammar could be used for research in bilingualism.

Chapter 6 presents the quantitative analysis of my German/English data. Sections 6.1 presents the corpora the analysis is carried out on; Section 6.2 discusses the distribution of languages in the corpora, individual variation in the distribution of languages among the core group of informants, the frequency of mixed utterances and the frequency of code-switches. Section 6.3 deals with a general quantitative analysis

of grammatical relations, before it explores the relation between syntactic dependencies and adjacency/distance from various angles. This Section (6.3) generates hypotheses on the effects of direct and indirect syntactic relations, the influence of the language of the head, and the direction of dependency relations in monolingual and mixed utterances. These assumptions are then explored further and tested in an analysis of individual grammatical functions. I first present the distribution of monolingual dependency relations in the corpus, before I compare monolingual German dependencies with mixed ones with an German head word (and the same for English), and mixed dependencies (Section 6.4.4). Section 6.4.5 describes how the data were tested for convergence. The last two sections in Chapter 6 present the distribution of word classes from the two languages (Section 6.4.6), and of syntactically unrelated discourse elements (Section 6.4.7).

Chapter 7 shifts from a more quantitative to a more qualitative analysis. Section 7.1 deals with conjoined clauses and focuses on syntactic structures involving *because* and *weil*. It tests whether causal conjunctions in mixed utterances are used in functions that warrant their dependent verbs to be in main clause word order position (V2); and demonstrates that we know enough about the relation between frequency distributions of this specific grammatical pattern in monolingual speech data and properties of the grammar to handle frequency in bilingual data. Section 7.2 studies gender assignment on the basis of agreement evidence. Like most other analyses in this thesis, it is based on the null hypothesis, i.e. words borrowed into German from other languages, English in this case, get assigned gender by the same semantic, morphological and phonological principles that are operative in the monolingual grammars. Section 7.2 demonstrates that this assumption works at least as well as special criteria and mechanisms proposed for the integration of "foreign" words into grammatical gender systems and is theoretically and methodologically preferable.

1. Sociolinguistic Background

The speech data this thesis is based on were provided by members of the most sizeable German-speaking linguistic minority community in the United Kingdom: Jewish refugees. Although the 1980s saw several large-scale surveys of linguistic minorities being carried out in the United Kingdom, neither of them includes the Jewish refugee community.

The aim of the Linguistic Minorities Project was to survey multilingualism in the school environment. In this particular context and at that particular time, the project would have had to look at the third generation of Jewish refugees from NS occupied territories in central Europe to include the speech community I am going to describe. Since language shift to English and assimilation to British culture was virtually completed within the second generation of this particular community, it is not surprising that the group I am investigating was no longer perceived as a linguistic minority community in the mid 1980s and is therefore not included in the Linguistic Minorities Project.

The survey that resulted in the publication of two volumes on *Multilingualism in the British Isles* (Safder & Edwards 1991) builds on the foundations of the Linguistic Minorities Project. The aim of this later project was to provide information on smaller communities, which until then had failed to attract the attention of researchers (the number of communities studied was extended from eleven to thirty-one). The editors of *Multilingualism in the British Isles* invited contributions on linguistic minority communities organised along geolinguistic lines. One chapter promises to deal with the 'immigrants, refugees and Holocaust survivors from the main historical centres of Jewish settlement in Eastern Europe' (Keiner 1991: 170). This section, however, focuses on speakers of Yiddish in the United Kingdom. As far as I can establish from the questionnaires and the sociolinguistic interviews collected from my informants¹, only one of them speaks Yiddish - and he learnt it in London after 1940 when living with an orthodox Jewish family in Stamford Hill, London.

In order to explain why Yiddish does not form part of the linguistic inventory of my informants, and because the pre-World War II Jewish refugee community has, to my knowledge, not been described from a sociolinguistic perspective, I would like to describe the historical, cultural and linguistic background of my informants before I move onto the data this thesis is based on in Chapter 2.

The contributions to *Multilingualism in the British Isles*¹ are organised around five main

issues, which were identified as of concern for all language communities studied. They are equally relevant for the pre-World War II Jewish refugee community. They are

1. The sociolinguistic situation in the country of origin
2. The nature and distribution of the speech community in Great Britain
3. Language change and shift
4. Language support in the community by various aspects of cultural, religious and social life
5. The role of education in language reproduction

As these five issues also provide a useful structure for this chapter, I adopt them as section-headers and will start with

1.1. The sociolinguistic situation in the country of origin

1.1.1. Historical, demographic and cultural background

The majority of my informants are from the capital of Austria, Vienna². A lot of prestige seems to be attached to this urban background (see also footnote 3): those of my informants who were not born in the capital (e.g. SOP in Ihog.cha³), were not very forthcoming with this information during the sociolinguistic interviews, i.e. they tried to hide their "provincial" origins. Overt prestige is attached to an urban way of living and speaking by my informants; but little or no prestige is attached to a rural background and accent or dialect⁴. We will see how this trend towards urbanisation continues in the United Kingdom. All of my informants lived in Vienna for a certain period of their lives.

Most of my informants are furthermore Jewish⁵. Jewish communities in Europe in general, and in Vienna in particular, can be roughly divided into two groups: the assimilated Jews and the "Ostjuden". Both groups originally had the same regional and ethnic origin: they descend from Jews who were dispersed from Palestine by the Romans and who settled in the Rhineland and other areas of Germany. Following the widespread persecutions that began with the Crusades, large groups of Jews migrated to Poland, the Ukraine and other parts of Eastern Europe. They became known as "Ostjuden". This distinction is important from a linguistic and cultural point of view.

Jews had lived in Austria⁶ as far back as the tenth century. Following the partition of Poland and the annexation of Galicia and Bukowina in the 1770s, the Habsburg Empire included the largest Jewish population in Europe, west of the Russian Empire. At the time, however, only 520 of approximately 350,000 Austrian Jews lived in Vienna; the vast majority lived in Hungary, Bohemia, Moravia and Galicia, i.e. they were Ostjuden. Before

1780, both the urban and the rural Jews were equally separate from the respective Gentile populations. This changed with the Toleranzedikt (1781) initiated by Empress Maria Theresia's son Joseph II. Among other things, the edict of tolerance admitted Viennese Jews to public education, and instructed the Jewish population to either send their children to state schools, or establish German language elementary schools for them, 'as part of the new drive to ease Jewish contact with the general culture' (Wistrich 1989: 16). Jews were also ordered to cease using Hebrew and Yiddish for public and commercial purposes and to adopt German-sounding family names.

The Toleranzedikt was welcomed by the Jewish communities in the Habsburg heartland (i.e. Austria, Bohemia) and received enthusiastically by the Jews of Vienna (Wistrich 1989: 19). The far more numerous traditional Jewry centred in Galicia and Hungary, however, regarded the edict of toleration as an oppressive decree. Their religious leaders feared those aspects of the Toleranzedikt most that were positively regarded by the Viennese Jewry, i.e. the transformation of the education system and the establishment's determination to abolish Yiddish and Hebrew. From a government point of view, the granting of special privileges for the *grossbürgerlich* (upper-middle class) Vienna Jews was in stark contrast to the humiliating repression of the Jewish masses in the provinces. This dichotomy continued to characterise Austrian Jewry policy before 1848 and had even longer lasting effects, as we shall see.

Heavy involvement in the revolution of 1848 on the part of the Jewish population of Vienna strengthened their identification with the German-Austrian people. The common aim was full constitutional freedom and equality. Throughout the second half of the nineteenth century, Viennese Jews started identifying themselves as Austrians in the national sense, and as Germans in the cultural and humanistic sense. In the course of the following twenty years, the remaining restrictions on Jewish residence and freedom of movement were abolished. The Grundgesetz (1867) finally granted civic equality to Austrian Jews. Once freedom of movement was granted, Jews from all parts of the Austro-Hungarian Empire started moving westwards - to Vienna or even further.

By the late 1860s, the Bohemian (e.g. informant EAR) and Moravian Jewry had already undergone an intense process of Germanisation and urbanisation. On arrival in Vienna, they therefore fitted in well with the local Viennese Jewish population. Bohemian and Moravian Jews also predominantly settled in the typically middle-class Jewish areas of Vienna (the Inner City, the Alsergrund, and the more up-market parts of the Leopoldstadt)⁷; they practiced middle-class occupations, spoke only German, and sent

their children to what were considered to be “good” schools, i.e. the Gymnasien, where they would be educated in German culture.

Once they were free to move and settle elsewhere, the Ostjuden also began migrate westwards towards urban centers. Initially they mainly reacted to the economically appalling circumstances they lived in, to economic anti-semitism, and to ‘local nationalist cross-currents’ (Wistrich 1989: 51). Towards the end of the nineteenth century, however, migration was increasingly prompted by anti-semitic legislation and attacks on Jews, i.e. the pogroms, particularly in Poland and Russia (see Ifen.cha lines 1055ff.). Mass migration of Ostjuden to Vienna resulted in a drastic increase of the Viennese Jewish population. By 1919 there were 175,318 Jews in Vienna, approximately a quarter of who were Ostjuden. This made Vienna numerically the third largest Jewish city in Europe after Warsaw and Budapest. Their presence was strongly felt not only because of their numbers, but also because of differences in socio-economic status, religious customs, dress, manners, and speech, that is, they spoke Yiddish not German. Vienna, however, did not provide fertile ground for a working-class, Yiddish-speaking subculture such as existed in London's East End⁸ or the Lower East side of New York. The dominance of the German language and culture in Vienna seems to have precluded this development. I will review the linguistic situation in Vienna in the first three decades of the twentieth century in the next section.

1.1.2. (Socio)linguistic⁹ background

As most of my informants are from Vienna, the majority language and culture they grew up with was German. During and after the collapse of the Austro-Hungarian Empire in 1918, however, Vienna was the central and eastern European melting pot par excellence. People from all neighbouring countries settled there and brought their languages with them.

Most of the languages spoken in Vienna in the first three decades of the twentieth century – apart from German of course - belong to the Slavonic family¹⁰. Slavic languages in every-day use in Vienna in the early twentieth century included: Czech, Slovak, Polish, Slovene, Serbo-Croat, Bulgarian, Russian, Ukrainian and Belarusian. After the Slavic languages, the second most frequently spoken non-Germanic language was Hungarian. From the Romance family Rumanian and French were used but by very different sections of the society. The two Germanic languages spoken and heard in Vienna in the first three decades of the twentieth century were German and Yiddish,

which has a Germanic base but incorporates many elements from Slavonic (and Semitic) languages.

Most of my informants know at least one other language apart from German and English. Their linguistic repertoires are closely linked with their socio-economic status, their educational background and their degree of assimilation to the Gentile majority culture. I will therefore discuss language use in the home country in connection with these other social variables.

The only informant who comes from a lower- working class background is the child of first-generation Eastern Jewish settlers in Vienna, i.e. Ostjuden. His parents fled the Russian pogroms and arrived in Vienna in 1915 and 1918 respectively (see Ifen.cha, lines 1051 ff. & 1255 ff.). They lived in the Leopoldstadt; his mother was illiterate; his father learnt to read and write in the Austro-Hungarian army, and TOM left school at the age of fourteen. His father was a hairdresser and his mother managed a grocery store. Although (Eastern) Yiddish was re-imported to Vienna by people like TOM's parents, TOM reports Russian as the language of the home, not Yiddish. TOM frequently draws attention to his multilingualism during the interview and lists the languages he speaks: Russian, German, Spanish, Arabic, Hebrew and English; Yiddish is not among them.

The majority of my informants, however, are not from an Eastern Jewish background, and they are upper-working to upper-middle class. The native Viennese Jews were assimilated to the Gentile culture and language, i.e. German. They lived in the Inner City and the Alsergrund, which are more consistently middle-class districts than the Leopoldstadt. Many of my informant's fathers practised middle-class occupations, they were lawyers, doctors, dentists, merchants, bankers, businessmen or accountants. Many of their parents had attended Gymnasien or other higher technical or commercial colleges. Most of my informants were pulled out of Gymnasium or university when they had to leave Vienna in or after 1938. They were members of the so called "Bildungsbürgertum", the educated middle-class, - not every informant to as high a degree as Sigmund Freud, the Wittgensteins or Robert Neumann, to name just a few famous Viennese Jews who also emigrated to London, but education and German language and culture were held in high esteem in most Viennese Jewish households. This was a direct consequence of the Austrian educational policy following the Toleranzedikt mentioned in the previous section. Another consequence of this edict was that the dialect of Yiddish originally spoken by the assimilated Jews, i.e. Western Yiddish, died out towards the end of the nineteenth century.

Most informants, especially the upper-middle class ones (e.g. informant MON, STER, EAR) furthermore speak fluent French. Informants who also belong to this social stratum but who were not born and raised in Vienna, tend to have some rudimentary knowledge of the majority language spoken in the part of the Austro-Hungarian empire they grew up in, e.g. Czech, Rumanian (e.g. EAR, ROS).

Apart from Standard (Austrian) German and French, all the languages listed above had low status. The usual reasons account for the low status or prestige of these languages. Attitudes towards languages are 'judgements about speakers rather than speech' (Trudgill 1975: 28) and the Slavonic languages, Yiddish, and Hungarian were the languages spoken by the predominantly poor, first generation economic, religious and ethnic migrants from the Eastern parts of the Austro-Hungarian empire. French, of course, had universally high status not only in Austria but all over Europe.

All of my informants are native speakers of a variety of Austrian German. The Viennese upper-working to lower middle-class was predominately monolingual but bi-dialectal at the beginning of the twentieth century. The two varieties or dialects of German spoken in Vienna are Standard (Austrian) German and the Viennese dialect (a more linguistic description of the two varieties is presented in chapter 2, section 2.5.1). Informant ELI calls them 'two different languages'.

***ELI: no there was always # how should I say # two different languages spoken.**

***ELI: the volkssprache ,, you know ,, was Wienerisch +//.**

Isper.cha, line 833 & 38

From a sociolinguistic point of view, however, I would not describe the linguistic situation in Vienna at the beginning of the twentieth century as diglossic¹¹, certainly not in the narrow sense (Ferguson 1959). This is mainly because the Austrian Standard and Wienerisch are both dialects of the German language. The main differences between them are phonological, i.e. differences in accent; morphologically and syntactically – and this is most relevant for the present study - the Standard and the Viennese dialect are quite similar. Standard Austrian German was furthermore not learned through formal education, and it was used for ordinary conversation by sectors of the community, especially by the Viennese Jewish middle class. I will discuss the Austrian Standard and Wienerisch in more detail in a moment (and my informants' language use at the time the

audio recordings were made at the very end of this chapter). For now the important point is that, although my informants are Jewish, none of them is an L1 speaker of Yiddish.

The two main varieties of German in which those of my informants who are bi-dialectal have L1 competence are

1. Standard Austrian German, or Hochdeutsch, which was also a supra-regional variety in that it was also spoken by the Germanised Jewish middle-class in urban centres throughout the Austro-Hungarian Empire. It is sometimes referred to as Kafka-Deutsch¹² or Burgtheaterdeutsch¹³. This variety was spoken by the upper middle class, the so called "Bildungsbürgertum" (educated middle-class); and
2. the Viennese dialect, called Wienerisch. This variety was a sociolect and spoken by the Viennese working-class, the Proletariat.

*ELI: ja wir, die juedische bevoelkerung, hat nicht Wienerisch gesprochen .

Isper.cha, line 900

*ELI: **we spoke** Hochdeutsch +//.

Isper.cha, line 825

*ELI: **it was only # in English terminology , the lower classes that spoke**

Wienerisch ,, **you know** .

Isper.cha, line 848

Given that my informants left Vienna approximately half a century ago, we cannot assume that their varieties of German (and the way they use them) are similar to today's. A comparison of my informant's Standard German and their Wienerisch with synchronic accounts of these two varieties (Dressler & Wodak 1982, Moosmüller 1991), however, shows that they have not changed very much. That is, the phonological and grammatical properties of the two varieties **and** the way they are used by my informants closely resemble synchronic descriptions.

Both varieties are clearly recognisable as Eastern German varieties, and Wienerisch and Standard Austrian German are, of course, only two poles of a continuum. Speakers who have access to both varieties at either end of the continuum can still locate themselves at various points in-between, depending on factors such as situation, setting, participants and topic. Most of my informants have access to various lects along the continuum and they occasionally switch from Standard German to Wienerisch (Dressler and Wodak 1982 call this 'dialect input-switches'). Other speakers do not have access to all varieties along that continuum. MON and EAR, two upper-middle class informants for example, do not speak the Viennese dialect and TOM's access to the Austrian standard

is restricted. Since the dialect used in the interviews and the group recordings is grammatically close to the Austrian Standard and because dialect-switching is not the main focus of this study, I will not describe the linguistic differences between Standard Austrian German and the Viennese dialect in detail. I will, however, point them out in the data.

The impression that my informants' varieties of German can be compared with synchronic varieties is independently confirmed by Moosmüller (1987), who matched the older section of her local Viennese sample with six Jewish refugees. Like the majority of my informants, Moosmüller's refugee subjects are from a middle class background and predominantly speakers of Standard German. Their attitudes towards the two varieties are furthermore strikingly similar: they are shocked by the increased use of the Viennese dialect since the end of WW II.

es ist die Ansicht all derer, die einmal hier gelebt haben und dann zurückgekommen sind, daß die Sprache sich leider sehr verändert hat ...

K. ... sagte, 'das ist ja furchtbar, wie die Leute dort sprechen'; jeder sagt das ... sogar meine Tante sagte, als sie nach dem Krieg wieder nach Wien kam, sagte, 'Du, sogar mein Schwager spricht diesen häßlichen Dialekt!'

(Moosmüller 1987: 183).

*ELI: but now [%com: referring to a post-WWII visit to Vienna] everybody +//.

*ELI: everybody spoke this Viennese dialect . Isper.cha, lines 846-54

*ALA: ja # well my Viennese was not ## [/] not like the broad Viennese they speak today ,, you know # ugly Viennese .

*ALA: I think it was # ein bisschen eleganter . lalirel.cha, lines 626f

*ALA: my German is ## Burgtheaterdeutsch . lariel.cha, lines 559

ALA then admits to having access to both varieties and provides an example of Wienerisch.

*ALA: I can speak Wienerisch .

*ALA: but uhm # I [= ich] kann (e)s no(ch) immer . lariel.cha, lines 573f

These examples illustrate similar attitudes towards the two varieties of German spoken in Vienna by an independent set of informants who, however, come from the same

community. The Standard had and still has overt prestige, and the Viennese dialect, i.e. Wienerisch, has low status for those who do not speak it, especially among those who had to emigrate. Most importantly, however, Moosmüller's study (1987) confirms that we can judge the grammaticality of the German spoken by Jewish refugees by present-day standards.

Es lassen sich also sowohl im formellen wie auch im informellen Sprechstil kaum Unterschiede in Sprachverhalten von Emigranten und ansässigen Wienern der Mittelschicht beobachten ...es läßt sich aus diesem Ergebnis schließen, das sich das 'Wiener Deutsch' der Mittelschicht ... nicht wesentlich verändert hat.¹⁴

Moosmüller (1987: 183)

After this review of the linguistic situation in the country of origin, I will summarise the historical and cultural situation in Vienna before my informants had to emigrate.

1.1.3. Conditions of Emigration and Immigration

We saw that uneven socio-economic development and varied stages of cultural assimilation divided the Viennese Jewry into two groups, assimilated Jews and Ostjuden. Relations between the two groups were strained. Many of the values which assimilated Jews cherished - beginning with the key concept of Bildung (education) and German culture – were perceived to be in sharp contrast with the "Unbildung" and the Yiddish¹⁵ language of the Eastern European Jews. Environmental and cultural pressures, however, eventually led to a growing integration of all Jews into the Viennese economy and to acculturation. A powerful factor of early socialisation into German culture proved to be the Viennese school system: nearly one-third of all Gymnasium students in Vienna were Jews. The determination with which Viennese Jewish parents pursued an élite education for their children was unique, reflecting both traditional Jewish respect for learning and their post-emancipatory striving for successful acculturation and professional mobility (Wistrich 1989: 58). We will see that the Viennese Jewish refugees brought these features (an urban life-style, social mobility, thirst for education, and a drive to make successful careers) to the United Kingdom with them.

Jews clearly began to behave, dress, and speak like Gentile Viennese but they still retained their own modes of social integration, their own network of Jewish organisations, and a sense of ethnic identity. Viennese Jews, who comprised almost 10% of the Viennese population in the last census before the Anschluss, also tended to cluster in

certain specific areas and form a definable ethnic enclave, despite the general trend to acculturation. Thus, despite cultural assimilation, 'structural assimilation' in the sense of Vienna's Jews fusing with the majority, had not taken place in Vienna at the beginning of the twentieth century.

Many assimilated Jews assumed that they had completely blended in with the local population and it came as a considerable surprise to them when anti-Semitism also hit them. Wistrich (1989:37) calls the Austrian blend of anti-Semitism an 'ominous compound of contradictory sentiments'. The contradictory sentiments are, on the one hand, contempt for Ostjuden, i.e. traditional Jewry, coupled with fear of the modern, assimilated Jews. He postulates that the anti-Semitism that emerged in Vienna after the revolution of 1848 was in essence a manifestation of these incongruous reactions, an amalgam of arrogance and anxiety. In my mind this is one of the most concise and precise explanations of the Austrian version of anti-Semitism. The assimilated Jews shared one of these sentiments, naturally the one not directed at them, with the Gentile population: contempt for the Ostjuden. This arrogance was mainly based on their higher socio-economic and educational status. We will see how this sentiment prevails in exile. The Gentile population on the other hand, feared the assimilated Jews for exactly these reasons: their economical success and their high culture. The economic situation in Austria in the 1920s and 1930s heightened this contrast and anti-Semitism grew.

The Jewish population was already exposed to a considerable amount of anti-semitism during the period of the so called Austro-fascism in the early 1930s. The political anger of the Dollfuss and Schuschnig regimes, however, was mainly directed against all political enemies, whether Jewish or not. Thus the first group of political refugees, Schutzbündler, communists and socialists, had already left Austria after the 12th of February 1934, i.e. after the Februarkämpfe. Mass-emigration¹⁶ only set in when German troops invaded Austria and the Anschluss took place on March 12th 1938. Austria ceased to exist as an independent nation state¹⁷ and became the Ostmark, a province of Germany.

Even after the Anschluss, the extent of anti-semitism varied considerably for a period of time. Initially it played a much more significant role as a political factor than as a social factor, i.e. on the level of Jewish-non-Jewish relations. Yet, on the political level, anti-Jewish regulations were not implemented systematically but often in contradictory ways (see Ifen line 1346): periods of violence and draconian measures were followed by periods of relative calm. Immediately after the Anschluss hundreds of Jews were arrested, but released soon afterwards, arrested again and sent to German

concentration camps. In March 1938 thousands of Austrian Jews were set free from Dachau on condition that they would leave the country within a fortnight (e.g. EAR's husband in Iariel.cha line 1238). These and the other Jews for whom the Reichskristallnacht (9-10 November 1938) had made it brutally obvious that there was no future for them in Austria, sought the help of various "refugee" organisations, e.g. the Israelische Kultusgemeinde Wien, the Gildemeester-Aktion and the Society of Friends. Between May 1938 and November 1941, 146,816 of the approximately 206,000 Austrian Jews left Austria, between 27,293 and 30,850 of them for Great Britain.

But the British authorities and the relief organisations created by the Jewish community in Britain did not exactly make it easy for Austrians to emigrate to Britain. Their reasons are understandable: the relief organisations had given an undertaking to the British government in 1933 that no Jews from Germany would become a public charge. After the Anschluss it became obvious to the various organisations¹⁸ that the Jewish guarantee could no longer hold good for the Austrian Jews who also sought refuge in the United Kingdom. The Home Office's main objectives were first, to maintain sovereignty over refugee policy and secondly, to contain the size of the refugee population. A solution agreeable to both parties suggested itself in the imposition of visas¹⁹ on new refugees. The implementation of the new policy decision did not take long: visas were required from May 21st 1938 onwards. The criterion for the granting of a visa was whether or not an applicant was likely to be an asset to the United Kingdom. The principle of pre-selection of potential immigrants to Great Britain in the country of origin led to a highly restrictive immigration policy that divided applicants into desirable²⁰ and undesirable²¹ ones. Among the "undesirable" refugees were 'small shop-keepers, retail traders, artisans, agents and middlemen, whose livelihood depends on commission and, therefore, on trade activity, and minor musicians and commercial artists of all kinds' (Muchitsch 1992: 14). Adult undesirable refugees had two main chances of obtaining a UK visa: to seek employment as a domestic servant²² or as an agricultural trainee (for example MEL from the core group of informants). In both cases adult refugees still required financial guarantees from organisations or individuals already resident in Britain.

Once the danger to the lives of the Jews still remaining in Nazi occupied territories became blatantly obvious, the Home Office accepted the principle of letting in large numbers of children. This resulted in the organisation of the so-called Kindertransporte, convoys of unaccompanied boys and girls between the ages of twelve and seventeen. Twenty three Kindertransporte left Vienna between December 1938 and August 1939,

carrying a total of 2,262²³ children to the United Kingdom. The parents had to stay behind. These children and many other refugees were admitted to Britain as transmigrants only; that is on condition that they would leave as soon as they had received visas for their original country of destination. To gain entry to the UK, they, like all other immigrants, needed financial sponsors.

The demand for refuge was at an unprecedented level by October 1938. Jews besieged the British Consulate in Vienna, queuing sometimes for days on end. There they became targets for Nazi harassment and were subjected to many indignities, ranging from being forced to wash cars, to cleaning the pavement with toothbrushes. Vienna's Jewish population had fallen from 165,000 in April 1938 to 67,000 by autumn 1939²⁴. The British visa application system was at breaking point. But emigration was no longer a question of choice, even if you were prepared to face imprisonment or concentration camp. The Nazis planned to eliminate Jews from Vienna by early 1940. Eichmann, who acted as Gauleiter for Vienna, set quotas²⁵ for ethnic Jews who could stay. Jews without means were among them – or they were deported to the Baltic states (Ungar & Schulle 2003). The remaining 45,000 Viennese Jews should be “cleared out” in the second half of 1939. Several weeks before the war broke out, the Jewish refugee organisations, who closely collaborated with the Home Office on matters of immigration visas, decided to accept no more cases and asked the British government to halt new admissions. After April 1940 only spouses and close family members were eligible to join relatives and partners in the United Kingdom, provided there was no risk to public funds. For those Jews and political refugees who still remained in the Austrian capital, the last possible route of escape – the land route to Shanghai – was also cut off in June 1941.

So out of the approximately 30,000 Austrian Jewish refugees who found refuge in the United Kingdom between 1938 and 1941

- 90 percent were ethnic (Jewish) refugees,
- just over ninety percent were from the Austrian capital Vienna,
- the majority were “desirable”, i.e. well educated and middle-class,
- 65 percent were under fifty years of age; many under seventeen²⁶,
- just over 61 percent were female²⁷,
- almost hundred percent spoke German.

This is the profile of the speech community under investigation in this project.

1.2. The nature and distribution of the speech community in Great Britain

One of the issues Safder and Edwards (1991), the editors of *Multilingualism in the British Isles*, ask their contributors to address under this heading is the history of arrival and settlement of the different speech communities in the United Kingdom. The vast majority of German-speaking refugees from Nazi occupied territories arrived in this country between 1933 and the beginning of World War II; the majority of Austrians arrived within a time-span of just two years, between 1938 and 1940. Those seeking refuge in Britain in the 1930s were exclusively ethnic and political immigrants, not economic refugees.

The Austrian refugees could have joined an existing Jewish community from the same country of origin in Britain: Jews from the eastern parts of the Austro-Hungarian Empire who emigrated to the United Kingdom in response to the pogroms at the beginning of the twentieth century. They, however, did not and joined a far more recent immigrant community with which they not only shared their ethnic but also their cultural and linguistic background: the German Jewish refugees who had emigrated just five years earlier.

The majority of pre-1938 refugees found homes for themselves in North and North-West London (Hampstead, Finchley, Golders Green and Belsize Park). As refugee communities had established themselves in these areas, so they became magnets for other refugees arriving from Germany and Austria. In the following extract my central informant (DOR) lists several factors why Hampstead was attractive to her: the language used by most people, the fact that the area was bohemian and un-English, and the availability of ethnic or continental shops and food.

*DOR: +, aber hier in Hampstead # da haben [/] hundert prozent # auf der strasse # man hat nur Deutsch gesprochen .

*EVA: wann war das ungefaehr, nach dem krieg ?

*DOR: das war nach dem krieg # und auch jetzt # wenn ich xxx stimmen hoere +...

*DOR: es ist ja **more** eine **bohemian** [gegend] [/] so@u # **you know** .

*DOR: deswegen sind wir doch alle hier - . .

*DOR: +^ weil es war nicht so typisch englisch .

*DOR: da war-0*en so, **you know**, **continental** geschaefte und das essen +...

*DOR: nicht jetzt, das war immer schon so .

*DOR: natuerlich haben wir alle [/] hier zusammengewohnt .lbron.cha, lines 197-214

Informant MON summarises the general feel of north-west London in the 1940s.

*MON: aber im allgemeinen war es [Hampstead] wie eine oesterreichische Insel .

Imon.cha, lines 555-6

The only informant who speaks Yiddish, as mentioned at the very outset of this chapter, briefly lived with an orthodox Jewish family in Stamford Hill. The majority of my informants, however, preferred to live in cramped conditions in more affluent areas of London than to join the Yiddish speaking community of Ostjuden in the East End. None of my informants even mentioned this possibility. Mallet & Grenville (2002: 179)²⁸ identify the 'uneasiness'²⁹ of the assimilated Jewish refugees with religious "traditional" Jews as a principal cause for the failure of the two groups to develop close relations. The religious "traditional" Jews, of course, are the descendants of unassimilated Ostjuden.

Interviewees for the oral history project, which has the same target community as my study, found the gulf between their middle-class background and the working-class background of many British Jews unbridgeable. And the British Jews resented the newly arrived refugees because of their arrogance (Mallet & Grenville 2002: 181). We are familiar with this pattern from Vienna.

While most refugees arriving with visas after May 1938 continued to settle in London, the provincial Jewish refugee committees did play a much larger part in the dispersal of those immigrants admitted with Home Office permits i.e. refugees trying to enter the United Kingdom after 1938. Unlike the earlier German arrivals, a larger proportion of Austrian Jews was sent to provincial towns and cities in Britain, especially industrial cities in the north and north-west like Manchester, Liverpool, Sunderland, Sheffield, Hull Birmingham, Leeds, Glasgow, Leicester, Edinburgh, Belfast, Newcastle, but also to Brighton, Harrogate, Southend, Cardiff and Swansea (Moore 1991: 75). There are still Jewish émigré communities in some of these places.

In the section on the community in their country of origin I stressed that urbanisation was and is an important characteristic of Central European Jewry. Being dispersed to provincial towns and cities therefore was not desirable for my informants. However, refugees sent to the north and north-west of the British Isles still considered themselves more fortunate than the agricultural trainees, domestic servants and children, who had to go wherever their placement was. All of them felt isolated, but being sent to Ireland to wash potatoes, like informant MEL, was certainly considered to be the worst draw. Like many refugees who got visas in one of the above categories, MEL gravitated towards

London during the course of the 1940s.

*DOR: ich hab(e) eine # freundin, die ist hergekommen mit fuenfzehn jahren .

*DOR: und is(t) hergekommen, um in einer [/] also mit (de)m kindertransport .

*DOR: und hat man sie nach **Ireland** geschickt .

*DOR: und war sie dort in einer **farm** .

*DOR: und war sehr ungluecklich .

*DOR: hat sie **potatoes** putzen muessen .

*DOR: sie war dann [/] und dann ist sie nach **Manchester** .

*DOR: hat man sie in ein **hostel** geschickt nach **Manchester** .

*DOR: and sie war # vielleicht vier oder fuenf jahre [/] vier oder fuenf jahre is(t) sie [/]
war sie in Manchester und dann ist sie nach **London** gekommen

lbron.cha, lines 1382-97

The unsettled lifestyle MEL was submitted to during the war years is quite typical for many informants. Several other factors prevented the refugees from settling down: immigrants were required to register with the police on arrival; they were admitted on three month time limits only, and they were not allowed to take up employment. Integration into the local communities only started when these restrictions were phased out and gradually replaced by statutory employment conditions (Alien Employment Order of 27 November 1939).

The outbreak of war, however, brought about other upheavals. The Kindertransport children, who had been sent to camps on arrival before the Refugee Children's Movement found foster parents for them, were now evacuated again if they lived in London or other areas that were threatened by German air raids. The same held true for children who had started integrating into the British school system, and for all domestic servants and agricultural trainees placed in "protected areas". Secondly, the 1920s Alien's Act was invoked and all enemy alien refugees were to be interned³⁰. In October 1939 Home Office tribunals started interviewing and allocating refugees to three categories of "enemy aliens". Category C "enemy aliens" were those people who were regarded as 'refugees from Nazi oppression' (Muchitsch 1992: 54). Category B "enemy aliens" were subject to restrictions affecting their freedom of movement. Category A 'enemy aliens' were those whose loyalty to their host country was doubted and who were under suspicion of cooperating with Nazi Germany. Initially only 528 Category A enemy aliens were interned, but by July 1940, 27,000 Germans and Austrians had been

deported to camps³¹. Another 4,000 were deported to Canada and a roughly equal number to Australia. From January 1941 onwards the British government started to release the refugees because the abysmal conditions in the internment camps had become public and the Arandora Star had sunk on its way to Canada with 1,600 refugees on board. By August 1941, 80% of the “enemy aliens” had regained their liberty. Few people had been detained for longer than six months.

Internment, or the threat of being interned, was the last shared experience of all German-speaking Jewish refugees from Nazi oppression. Although major disruptions of my informants’ lives stopped after that, one cannot really talk about settlement until after World War II. The war itself actually improved the professional situation of many refugees, not only because of the chance to do war work in factories and the general shortage of labour, but also because it created new demands and opportunities: the BBC Monitoring Service, for example, required native speakers of German and employed a considerable number of the best qualified refugees. Generally, however, the professions in which the refugees worked were concentrated in a limited number of areas: teaching and education, domestic service, publishing, journalism and the media, textiles and clothing, medical care, arts and architecture, and everything from manual work to enterprise in the industrial sector.

Though employment did improve the refugees’ financial situation, many still had to rely on other sources of income. Financial and other support mainly came from refugee organisations³²; the most important one for my informants being the Austrian Centre³³. The Austrian Centre was founded in 1939 to provide social, educational and cultural services for refugees from Austria. It had a youth organisation called “Young Austria” (see Jen3, lines 202-215), and an umbrella organisation called Free Austria Movement (FAM) which was founded in December 1941 with the aim of bringing about a united political front of all Austrian antifascist groups in exile. Many of FAM’s leading members were Communists, and therefore some refugees were reluctant to join the Austrian Centre. They, however, lost out on being able to socialise with fellow refugees, with sometimes far-reaching consequences:

DOR: ja ja # and # meine schwester [/] wenn meine eltern nicht gekommen sind [],
waer(e) Osie sofort zurueck -. weil sie hat nie gehoert xxx zum Austrian Centre xxx.

lbron.cha lines 776-780

Stefan Holland’s (Mallet & Grenville 2002: 116) assessment that the Austrian Centre

fulfilled a social rather than a political function for many members seems accurate to me. The Austrian Centre even had its own theatre, the Laterndl, which staged many popular performances during the war years but was dissolved in 1945. So was the Austrian Centre itself.

The war years with their upheavals also marked the end of emigration and the beginning of the settling-in process. In 1944 seventy-five percent of the German and Austrian nationals in the United Kingdom were granted conditional residency and one year later they could apply for naturalisation as British Citizens, which many of them did. This removed further barriers and work restrictions, enabling refugees to operate under largely the same conditions as the indigenous population. And, like the population as a whole, the German speaking Jewish refugees were busy rebuilding their lives: taking up new opportunities in training, education and work, finding permanent homes (in north and north-west London mainly) and starting a family. This all impinged on the decision of whether to return to their country of origin or not. Although my central informant's experience is rather unusual in that her parents survived the Holocaust, it is also typical in that DOR had a young family and a home.

*DOR: meine eltern sind nach dem krieg hergekommen +/.

*DOR: meine tochter war damals drei jahre alt xxx.

*DOR: + weil sie haben gedacht ## das land war so schlecht in Wien +...

*DOR: hier habt's ihr schon die wohnung und alles moegliche +...

Ibron.cha, line 764

Many Austrian Jewish refugees achieved a relatively settled and financially secure state in the country of emigration by the end of World War II. Few of them returned to Vienna after the war but, although most of them had lost all their family during the Holocaust, many of them maintained contact with the home country and links with refugee groups in the USA, Canada and Australia. In the United Kingdom, the German-speaking refugees were concentrated into a relatively small geographical area (NW London) which made it possible to maintain strong social networks.

1.3. Language change and shift

As discussed in the section on language use in the home country, all my informants are native speakers of German. The upper-middle class ones were already bilingual in German and French before they learnt English. In the nineteenth and at the beginning of

the twentieth century English was a less prestigious language than French, but it was taught in Austrian schools. The main emphasis in foreign language teaching at the time, however, was on reading and writing and the oral skills were grossly neglected. This meant that the majority of my informants who had attended Gymnasien and other higher education institutions, could read newspapers when they arrived in Great Britain, but they struggled with comprehension and production, as ALA recalls.

*ALA: I had English at school # at the Handelsakademie .

*EVA: how many years ?

*ALA: four years .

*ALA: but when I came here ### the first day I arrived [/] , uhm
I went to a picturehouse # the [/] the film .

*ALA: I thought to learn a bit of English .

*ALA: and I was very proud, I would be able to understand it .

*ALA: and I remember it was +... I think it was # a Greta Garbo film .

*ALA: and I remember I was terribly disappointed because I only understood one word

*ALA: when she said " no " to him .

*ALA: that's all I understood .

*ALA: I didn't understand any more .

*ALA: it took [/] it took quite some time to # [/] to get [/] to get [/] you know
for the brain to readjust.

*ALA: I knew the words !

*ALA: I couldn't [/] couldn't understand it .

*ALA: but in person to person # I could speak simple sentences of course ##
because I knew the vocabulary .

lariel.cha, lines 48-86

Initially the German-speaking Jewish refugees used their mother tongue in the United Kingdom, simply because they had no choice. The children naturally picked the new language up most quickly, especially those in boarding schools. The Kindertransport children who were adopted by English foster parents did not even have the opportunity to keep using their mother tongue. The older the immigrants were, on the other hand, the more they struggled with the new language.

Once the United Kingdom had entered World War II, the incentive for many refugees to use English, either in public or even amongst themselves, became particularly strong, as German was, after all, the language of the enemy³⁴. Jewish refugee organisations published advice not to speak German in public³⁵ but we saw that this had little effect in

Hampstead. The next generation was particularly sensitive to the language issue.

I was terrified my parents spoke German in the street, especially during the war. I would sort of crawl away - "I don't belong to them" sort of thing³⁶

(Mallet & Grenville 2002:237)

On the domestic front, the matter of speaking German was not always straight forward either, and naturally it was the second generation that led language shift from the mother tongue to English.

DOR: sie [DOR's three year old daughter] hat muessen [] Deutsch sprechen mit meinen eltern .

*DOR: aber sie hat sie gezwungen, dass sie Englisch lernen .

*DOR: sie hat immer gesagt +"/.

*DOR: +" you are in England # you have to speak English +".

DOR: so haben sie [DOR's parents] muessen [] Englisch lernen .

*DOR: aber dadurch hat sie # wie sie noch zu haus(e) war # nur Deutsch gesprochen .

DOR: hat sie muessen [] verstehen .

DOR: hat sie muessen [] sprechen, ob sie wollen hat oder nicht .

lbron.cha 44-57

EAR summarises the experience of many parents who tried to raise their children bilingually.

*EAR: wir haben versucht, mit den kindern Deutsch zu sprechen .

*EAR: sie haben uns immer Englisch geantwortet . lariel.cha, line 1334

As in many bilingual communities, the shift from the L1 to the L2 was accompanied by a period of code-mixing; the mixed variety was/is called Emigranto or Double Dutch. In the 1940s, however, code-mixing constituted a transitory stage in the process of becoming bilingual for the first generation of refugees. EAR recalls

*EAR: und wir haben sehr viel gemischt im anfang .

*EAR: wir haben # Deutsch gesprochen und ploetzlich Englische phrasen hineingegeben # aus faulheit [/] aus +...

*EAR: und wir haben uns dann sehr bemueht , das nicht zu machen , denn das ist +...

*EAR: entweder man spricht Deutsch oder man spricht Englisch .

*EAR: aber wir haben sehr viel gemischt .

lariel.cha, line 1022f

In keeping with the high esteem in which the German language and culture were held by my informants in Vienna, they also wanted to learn “good” English – and to keep their two languages separate. At the beginning of the 1940s code-mixing was a verbal strategy enforced on my informants by their lack of fluency in English (not laziness) and by being immersed in an English-speaking environment. Mixing was a transitory stage in the process of language shift and, as EAR states, was to be avoided. This is very different to the situation at the time the data for this project were collected (1993) when code-mixing had become an accepted mode of interaction for a sub-group of my informants after retirement. I will return to this situation at the end of this chapter.

The speed and extent of language shift varies enormously from informant to informant, depending on factors such as degree of identification with the mother- and/or host country culture, settlement patterns, involvement in social networks, socio-economic factors and occupation, to name the most important ones. I would like to illustrate this with two rather extreme examples. MON, who struggles to maintain a conversation in English, lives in Hampstead. Her closest ties were with her Austrian mother, her Swiss partner and the central European group of artists to which she belonged. ELI, on the other hand, struggles to maintain a conversation in German. She lives in West London, only occasionally sees Austrian refugees at the synagogue or when attending cultural events, and worked in the textile industry as a designer. Attitudes of course also play an important role. Some refugees reject the German language as too painfully connected with the past (Ibron lines 981-1019), others guard it carefully as something too precious to lose³⁷. In 1993 English was the language of habitual use for the vast majority of my informants. Bilingualism in the next generation is not the usual pattern. Many émigrés, however, are drawn together by their shared language and experiences and deliberately seek friends from the refugee community.

*DOR: **because** man fuehlt sich mit den eigenen leuten wohler .

*DOR: **you know**,, wir haben die selbe # nicht nur die sprache die selbe **mentality** .

*DOR: **we enjoy** [/] wir gehen gerne ins kaffeehaus # noch immer .

*DOR: **you know**,, wir sizten da fuer stunden +...

@Activities: laughter

*DOR: wir gehen ins theater +...

*DOR: wir haben **different** +//.

*DOR: die selben [%pho: **idea**-en] eigentlich # wie wir s(ie) als kinder gehabt haben .

Ibron, lines 221-32

And there is a marked tendency among my informants to return to their roots in later years. At the time of data collection, almost all of my informants were of advanced age and they increasingly mixed with German-speaking Jewish friends from a similar background. I mentioned earlier that the Austrian Centre was abolished shortly after World War II. The Association of Jewish Refugees (AJR), however, took over many of its roles in the refugees' later lives. The AJR publishes a monthly paper, organises cultural activities, runs old people's homes and a day-centre in Cleve Road, London NW3. It is particularly at this day-centre where Emigranto/Double Dutch flourished again in the later years of the twentieth century when most of my informants were already retired. This leads me to the next section.

1.4 Language support in the community by various aspects of cultural, religious and social life

I have already mentioned that most German-speaking Jewish refugees still have links with the country of origin. For many, these links are of a personal nature and they are maintained through letters, telephone calls and visits. Quite a few informants also spend/spent their family holidays in Austria because they wanted to pass on their love for the Austrian countryside and traditional Austrian sports, like hiking and skiing, to their children.

The role played by the wider community in the maintenance of language and culture again varies considerably, and it mainly depends on the individual refugees how much they get involved. The synagogues never played a central part in the lives' of the first generation of émigrés. I mentioned in previous sections that the process of assimilation was already well advanced in Vienna. It resumed once the émigrés had settled in the United Kingdom. My informants' resentment of the orthodox religious rituals and the community who practised them went so far that they founded their own synagogues³⁸. Many of them, however, had contact with Jewish organisations, mainly for social purposes, during their working lives. What I said about my informants' social contacts in the previous chapter, also holds true for their religious and ethnic sentiments: with advancing age there is a marked tendency for my Jewish informants to return to their roots. The overall picture, however, is not one of disassociation from Judaism. The

refugees' sense of their Jewish identity is often more cultural than religious.

Cultural activities do indeed play a much more prominent role in my informants' lives. The AJR, as I have already mentioned, organises cultural activities at their Day-Centre and trips to galleries, concerts, theatre and opera performances; so does the Austrian Cultural Institute. These cultural activities are very popular amongst informants but many of them do not rely on organisations to have an active cultural life. They also exchange books, videos, records and CDs with German music, drama and art on an individual basis. The main programmes my informants watch on satellite television are also related to various aspects of German art and politics. Many Austrian Jewish refugees hold dual citizenship today and are amazingly well informed about Austrian politics. Ethnic businesses like the food industry played an important role in language and culture maintenance during my informants' working lives. This sector, however, has become less important due to increasing upward social mobility and retirement. The food industry has furthermore been taken over by other ethnic minority communities in the UK. Today, for example, Polish is the lingua franca in the Austrian Sausage Factory in London NW1.

1.5. The role of education in language reproduction

Safder & Edwards (1991) identified three main strands in language reproduction for minority communities: the family, the community and the school system. They furthermore hypothesise that successful L1 transmission will usually depend on all three strands working in harmony.

German was and is taught as a foreign language in British schools and universities. Although quite a few of my first generation informants worked as German language teachers, none of their children chose German at school, as far as I am aware³⁹. So although this community was in the fortunate position that the state school system would have provided free German classes, this opportunity was not taken up by the second generation. This trend may be linked to the widespread practice among the first generation refugees to give up German for the benefit of the children's education.

*EAR: wir haben mit ihnen zuerst Englisch gesprochen , denn wenn man in dem land lebt und geboren ist , muss das die muttersprache sein -, unserer ansicht nach .

*EAR: mein mann hat einen buerokollegen gehabt , der mit den kindern nur Deutsch gesprochen hat .

*EAR: und wie sie mit fuenf jahren in die schule gekommen sind , haben die kein wort

So neither the family, nor the community, nor the school system facilitated successful transmission of German from the first to the second generation of Jewish émigrés. The German-speaking refugee community actively facilitated German culture - and via this route also language maintenance among the first generation - but otherwise made no formal attempts at language reproduction. Community organisations, however, provide refugees with the opportunity to use whichever lingua franca they feel most comfortable with in their venues, and this was Emigranto in the case of those people who frequented the AJR Day-Centre in 1993.

1.6. Language use in the community at the time of data collection

As mentioned in section 1.3, all of my informants predominantly spoke English in the home and all other domains at the time of data collection. Due to the pattern of immigration described in the previous sections, the vast majority of them are late bilinguals. The late bilinguals tend to have a marked Austrian-German accent when speaking English, but from a grammatical point of view, they are competent speakers of Standard English⁴⁰.

Some of my informants report that keeping their two languages distinct in language production gets increasingly more difficult with age. This does not mean that they return to monolingual German but that they start code-mixing again because early acquired German lexical items from their mother tongue reach threshold level first. Informant GOT is not exactly an early bilingual (age of onset 16), but he is eleven years younger than the informant quoted next (ALA); their bilingual (psycholinguistic) experiences in older age, however, are similar.

*GOT: [Mixing] something I've never done when I was younger. [...] but now it is happening [...] Of late, these last five years, I've noticed that one does that and one tends to do that, even some friends my generation [...] I think, twenty five years ago we would never have used a German word but we do it now. I think this is something to do with age. I think this is a medical question rather than a language one, the way our brain works. I have heard people say that, towards the end of their life, they go back to thinking and operating better in their mother tongue.

Igot.txt

Informant ALA is a late bilingual who arrived in the United Kingdom at age twenty-seven. Since ALA talks about both comprehension and production and describes the process of L1 suppression extremely well without over-generalising, I will quote a longer extract.

- *ALA: although my vocabulary in English is better than the German vocabulary,
- *ALA: it's beginning to +...
- *ALA: the older I get , the less I understand .
- *ALA: and I am told by [/] by 0an ear specialist , that is the natural thing +...
- *ALA: you mind is ... accepting more easily the [/] the language you have grown up with
than the language you have learnt in later years .
- *ALA: and he said that will go on and on and on .
- *ALA: and it will come to it that # when you go shopping , you will suddenly # say
potatoes will ask for kartoffel .
- *ALA: sometimes ## I can't recall the English word and the German word I always know ,
although it happens sometimes the other way round as well .
- *ALA: but it (i)s mostly the English word I'm sometimes missing .
- *ALA: I notice +...
- *ALA: I'm afraid almost -, because ## it can happen that I am with an English person
suddenly using a [/] German phrase ,, you know ,, unwittingly .
- *ALA: which seems to prove that as one [/] or as I grow older the mind +//.

lariel.ch lines 662 – 771

Again with increasing age and the return to the roots (not only observed among my informants but also by Mallet & Grenville (2002), many of my informants relish the opportunity to speak German with fellow émigrés. They, however, do this only with native speakers of German who also want to use their mother tongue. The domains in which use of German was observed or reported was in informants' homes, at cultural events organised by the Austrian Institute or the AJR and at the reform synagogues. The German heard and recorded in these situations is almost exclusively the Austrian Standard.

Psycholinguistic and cultural reasons largely account for the occasional use of English when the group of informants I described above is in monolingual German mode. The psycholinguistic reason most frequently observed is the age of acquisition of certain lexical items from a limited number of lexical fields. Health and health care, for example, are almost exclusively represented by English lexical items in my data. My informants simply do not have the German lexical items for these concepts in their mental lexicon

because they had not yet encountered the problems associated with health and healthcare when still in a German-speaking environment. High frequency lexical items also frequently occur in English, e.g. *bus*, for example, is pronounced as /bʌs/ rather than /bus/. Lexical items representing concepts specific to English culture, e.g. *waiting list*, are furthermore inserted in English when my informants are in monolingual German mode.

These observations also hold true for the core group of subjects. But the pattern of everyday language use displayed by the central informant DOR and the close knit network around her (MEL, LIL, TRU) is distinctly different. For them and the other émigrés who visit the AJR day-centre on a regular basis, code-mixing or Emigranto has become a mode of interaction. This does not mean that they are unable to speak monolingual German or English, but because mixing has become a code for everyday language use for these speakers, they find it harder to stay in monolingual mode (Grosjean 1986) than the other informants. Meeting the group of central informants on a visit to Vienna several years after data collection in London supports this observation. LIL and TRU's sister GRE survived Dachau and returned to Vienna after liberation. Although her English is not very good, DOR, LIL and TRU still used a lot of English when supposedly in monolingual German mode. Another characteristic of the German spoken by this group of speakers is that it contains more linguistic features characteristic of the Viennese dialect and accent.

In the following narrative, the central informant describes the language use of her circle of friends and confirms that Emigranto is perceived as a code/language or *Sprache* by outsiders.

*DOR: wir sprechen ein bisschen Englisch ein bisschen Deutsch .

*DOR: und niemand weiss [-] .

*DOR: wir waren [/] in Spanien waren wir vor zwei jahren .

*DOR: und ich war mit meiner freundin dort .

*DOR: und wir haben gesprochen so a [: ein] bissl Englisch # so gemischt,, nicht ?

*DOR: and haben sie [/] ist neben uns ein Wiener gesessen .

*DOR: sagt er +"/.

*DOR: +" ich kann sie nicht verstehen .

*DOR: +" ich spreche Englisch # ich spreche Deutsch # aber was ist das fuer eine
sprache ?

Ibron.cha lines 141 – 154

The language or *Sprache* is Emigranto or heavy inter- and intra-sentential code-mixing between Austrian German and English. I will discuss the language use in the fully transcribed files in more detail in the next chapter.

I have shown in this chapter that for all its special historical background, the Jewish émigré community in London is a typical bilingual community: everybody – or almost everybody (MOT) – is bilingual and both languages have high standing, though be it for different reasons. Therefore code-switching is to be expected (even though the mixed variety itself has only covert prestige). Under ideal circumstances, i.e. no pressure from the linguistic majority community and a close-knit network of bilinguals in frequent verbal interaction, mixing seems to have become a mode of everyday interaction, i.e. a code or language. In the chapters on linguistics analysis, Chapter 6 and 7, I will investigate whether Emigranto really is a language, with syntactic rules. In the next chapter, however, I will describe the way I obtained the data this study is based on.

¹ A few more of my informants may have a passive knowledge of Yiddish, but as Keiner (1991: 175) states: 'a very common response on the part of ... Jews from the mainstream communities is to deny all knowledge of Yiddish. ... Speaking Yiddish today is almost invariably an act of conscious choice or at least continuing commitment to a minority culture' (Keiner 1991: 172). Informant GRU, who admits to speaking Yiddish, completely disassociated himself from Austria and derives his ethnicity from being Jewish.

² EAR (Iariel.cha) was born and raised in Prague; ROS in a small village in what is now Bulgaria; DAC in Gmunden, Upper Austria, and SOP (Ihog.cha) in a small village just outside Vienna in the Burgenland. To my knowledge, all other informants are from Vienna.

³ Reference to the CHAT (see Chapter 3) transcribed files of the corpus are made by filename with the extension *.cha; participants in the transcripts are identified by a three-letter code.

⁴ The researcher's German is influenced by her maternal grandmother's Upper-Austrian dialect. She was referred to as a *G'scherte* by one of the central informants. Teuschl (1990: 96) defines *Gschertler* as 'farmer', 'provincial person', 'backwoodsman/woman'.

⁵ Non-Jewish informants are not included in this project. See Chapter 2 Section 2.

⁶ This section is largely based on Wistrich (1989) and Rosenblit (1983).

⁷ In 1919 Jews represented more than ten percent of the population in six districts of Vienna: Leopoldstadt, Alsergrund, Inner City, Brigittenau, Mariahilf, Neubau. Only a small percentage of the most wealthy and assimilated Jews lived in the villa districts of Döbling, Währing or Hietzing.

⁸ The Yiddish speaking linguistic minority community in London's East End discussed in Safder and Edwards (1991) is a direct result of mass migration of predominantly Galician Ostjuden.

⁹ A more detailed linguistic description of my informants' varieties is presented in Sections 2.5.1 & 2.5.2.

¹⁰ The Viennese comedian Georg Kreisler humorously portrays this situation in 'Wien ohne Wiener'. In this song he "reads" entries from the Viennese telephone directory and not a single name is of Germanic origin; the vast majority of them are Slavonic.

¹¹ Diglossia is a relatively stable language situation in which, in addition to the primary dialects of the language (which may include a standard or regional standards) there is a very divergent, highly codified (often grammatically more complex) superposed variety, the vehicle of a large and respected body of written literature, either of an earlier period or in another speech community, which is learned largely by formal education and is used for most written and formal spoken purposes but it is not used by any sector of the community for ordinary conversation. (Ferguson 1959: 336)

¹² After the novelist, who lived in Prague most of his life.

¹³ After the Theatre in Vienna which was founded by Joseph von Sonnenfels, one of Empress Maria Theresa's leading Jewish advisors. The Burgtheater also produced many plays written by Jewish dramatists.

¹⁴ Ursula Seeber has intimate knowledge of the speech community under investigation from setting up an archive of art produced by Austrian Jewish refugees in exile for the Literaturhaus in Vienna. Her observation about the language use of the Jewish émigrés furthermore corroborates Moosmüller's and my impression 'Sozusagen 'live' gesprochen, sieht man, dass sich diese Leute die Sprachkultur der Vorkriegszeit erhalten haben. Die sprechen alle ein sehr schönes und sehr reiches Deutsch, wie man es bei uns nicht mehr findet Und sie behaupten immer, sie können nicht mehr Deutsch'. (Seeber in *Kultur* 1993/1: 18)

¹⁵ Karl-Emil Franzos, an Austrian novelist, regarded Yiddish as a corrupt and vulgar jargon that obstructed the assimilation which - in his view - was the only long-term solution to the socio-economic misery of Eastern Jewry.

¹⁶ 90% of the German and Austrian refugees in the UK were Jewish.

¹⁷ This meant that all Austrian passports became invalid. Everybody who did not apply for, or was not issued with a German passport was stateless. For this reason it is also difficult to distinguish between German and Austrian Jewish refugees in many statistics.

¹⁸ The German Jewish Aid Committee (GJAC) and the Committee of German Jews (CGJ) limited its commitment on the basis of nationality, saying its funds had been collected for German Jews. See also footnote 18.

¹⁹ Home office minutes of a meeting with a CGJ deputation on April 1st 1938 (PRO HO 213/42) make it clear that it was the German Jewish refugee delegation who stressed the importance of an imposition of visas on Austrian Jews. The argument was that they were largely of the shopkeeper and small trader class and would therefore prove much more difficult to integrate than the average German who had come to the United Kingdom (London 1999: 61)

²⁰ Desirable refugees were 'prominent Jews who ... had achieved distinction whether in pure science, applied science, such as medicine or technical industry, music or art. This would not only obtain for this country the advantage of their knowledge and experience, but would also create a very favorable impression in the world, particularly if our hospitality were offered with some warmth' (minutes of cabinet meeting on 12 April 1933).

²¹ '[A]mong the applicants for visas there are likely to be a large number who have no special claims to hospitality in the United Kingdom and will obviously be unacceptable as permanent additions to the population. Even if they are not personally undesirable, the admission in large numbers of refugees who have no resources and no definite projects would create serious economic and social problems' (Instruktionen des Passport Kontroll Departments an die britischen Beamten betreffend die Ausstellung von Visa an Österreicher und Deutsche, as cited in Muchitsch 1992: 14).

²² One third of all refugees who came to Britain in the 1930s entered as domestic servants, the vast majority of them being women.

²³ One third of these children were from 'non-Aryan' Christian families.

²⁴ The Jewish death rate rose drastically, one-eighth due to suicide. This figure includes the researcher's grandmother.

²⁵ 20,000 - 25,000 Jews over sixty-five years of age, pensioners and the very poor could stay.

²⁶ I do not know the exact percentage rate but know that out of the under fifty year olds many were under seventeen because all those who came on domestic, agricultural or Kindertransport permits had to be under seventeen years of age.

²⁷ Applicants for domestic permits, which were usually granted, were predominantly female.

²⁸ The oral history project conducted by the Research Centre for German and Austrian Exile studies.

²⁹ Or should we call it arrogance or contempt?

³⁰ The home secretary Sir John Anderson and the Prime Minister at the time, Neville Chamberlain were against internment. Churchill, on the other hand, was set on a policy of mass internment of enemy alien refugees (London 2000: 170).

³¹ The legal basis for internment was the Royal Prerogative 'the King's enemy is in the hand of the King' (Muchitsch 1992: 54).

³² Many refugee organisations were and still are based in North and North-West London.

³³ The Austrian Centre grew out of Austrian Self-Aid, an organisation founded in 1938 to provide assistance to fellow refugees.

³⁴ Internment interviews were being held at the time. Being able to conduct these interviews in the

host country language, i.e. English, naturally helped not being classified as an enemy alien.

³⁵ 'Sprechen Sie nicht Deutsch auf der Straße, in Verkehrsmitteln oder sonst in der Öffentlichkeit, wie z.B. in Restaurants. Sprechen Sie lieber stockend Englisch als fließend Deutsch - und sprechen Sie nicht laut.' (Ratgeber des German Jewish Aid Committee für ankommende Flüchtlinge, cited in Muchitsch 1992: 33)

³⁶ For the expression of a similar sentiment compare

*MON: die kinder wollten [/] haben sich ein bisserl geniert dass sie so emigranteneltern haben .

*MON: that they speak so with a heavy accent [%pho eckzent; mimicking the German accent].

lmon.cha, lines 955-9

³⁷ The latter is particularly true for informant EAR, who maintains the high standard in the language established in German-speaking circles in Prague.

³⁸ The Reform Synagogue in Berkeley Square and the Liberal Synagogues in Belsize Square and St John's Wood.

³⁹ This also holds true for all the refugees interviewed for the Research Centre for German and Austrian Exile study's oral history project (Mallet & Grenville 2002).

⁴⁰ No formal competence assessment or language testing was carried out though.

2. The data

This chapter deals with the informants and audio data the following study is based on. Data collection starts with sampling. Section 2.1. describes how the informants for this project were selected, section 2.2. introduces the individual informants in the context of the communities and networks they operate in, and section 2.3. describes how the audio recordings were carried out. Sections 2.5 - 7 return to the informants' two codes in more detail than Chapter 1. Factors influencing language choice are discussed in section 2.6, and the actual language use in the audio recordings selected for the study is reviewed in section 2.7. As the transcription system and the electronic data-base the transcribed texts are stored in (and can be analysed with) are a fairly recent development in bilingualism research, I will dedicate a separate Chapter (3) to them.

The speech data the present project is based on are a sub-sample of those collected for an earlier project (Eppler 1993), in which I established a broad sociolinguistic profile of the Austrian pre- World War II Jewish refugee community in London. The following explanation applies to the sampling procedure, the informants and the data from the original project, but at the end of each section, I focus on the information relevant for the present project.

2.1. Sampling

The target speech community for the present project is German-speaking Jewish refugees who emigrated to Britain in the late 1930s and stayed here. As the informants whose speech data are analysed for this project are part of the original much larger sample, I am going to describe the original sampling procedures next.

Ideally sociolinguists aim at a random sample of informants from the speech community under investigation. In order to select a random sample, however, one needs to know the size of the target community. This is impossible for the Austrian Jewish refugee community in the United Kingdom for several reasons. First, the number of Jews recorded as living in Austria in 1938, approximately 181,778 according to Ungar & Schulle (2003), is likely to be inaccurate because it is based on census figures representing persons belonging to the Jewish religion in Austria at the time. Many upper-middle class and lower aristocracy Jewish families, however, had converted to Christianity following the implementation of the Toleranzedikt¹. The census figures therefore do not accurately reflect the ethnic Jewish Austrian population. The actual

number of Jews as defined by the Nürnberg Laws living in Austria before the Anschluss was most probably closer to 206,000.

Secondly, as a consequence of Austria having ceased to be a nation state after the Anschluss, all Austrian passports became invalid and many Austrian Jewish refugees emigrated either as Staatenlose (stateless citizens) or Germans. Thus British Home Office figures on Austrian immigrants are also inaccurate, so we do not even know the exact size of the target community in 1938. The most accurate figure I could obtain is that 27,293 to 30,850 Austrian Jews emigrated to Great Britain between May 2nd 1938 and November 1941 (Muchitsch 1992). How many of them stayed and still live in the United Kingdom, we do not know.

Contemporary British census figures cannot be used as a source for establishing the size of the target community because many Jewish refugees became naturalised British citizens after World War II. The language question in the British census questionnaire does not help either, because the number of native speakers of German not only includes all German, Austrian, Czech etc. Jewish refugees but also all subsequent immigrants to the United Kingdom from German speaking countries².

Other conventional ways of sampling, such as searches of local electoral registers for distinctive names, and scanning of telephone directories, were of little or no use for this project either. First, because approximately 3,000 Austrians (Muchitsch 1992: 497) joined the British Army between 1941 and 1943. Those men who were sent to Germany or Austria with British troops were strongly advised to change their German names to 'more English-sounding ones' (Ibuk)³. Secondly, many of the girls who came to Britain on a Kindertransport or with their parents married British citizens and took their husbands' names.

These are the reasons why neither nationality, nor ethnicity, nor language, nor surnames - nor a combination of them - could reliably be used for sampling purposes for the present project.

I eventually used three main sources, separately or combined, in order to set up a sampling frame for the target community. The most important initial contact with my target community was the list of clients of an Austrian lawyer who deals with pension claims and other legal problems encountered by Austrian Jewish refugees residing in Britain. The Austrian government decided in 1992 that Austrian Jewish refugees who

had not returned to their country of origin were also eligible for Austrian state pensions. The vast majority of first generation refugees therefore sought legal advice on how to claim for their Austrian pension just at the time when I started sampling for the present project. One solicitor⁴ dealt with a large number of these claims because he himself had been a member of the Austrian Jewish refugee community in the United Kingdom.

This solicitor made his list of clients available to me and I sent contact letters giving basic information about my project (my occupation and age and the aim of the proposed meeting) to a random sample of contacts from the target community. I do not claim that this list is representative but when in constant contact with the target community during data collection, it emerged that almost all members of the Austrian Jewish refugee community in London knew of this solicitor and that his contact details were passed around among them. This made me confident that my method of sampling was as reliable as it could be under the circumstances. Given that no other lists of names and addresses of the target community were/are available, this list served as my main source for sampling the target community.

Once initial contacts had been made, I also utilised snowball sampling. Informants who had gained interest in my project during the sociolinguistic interviews contacted friends from the same speech community. Some of them were willing to become additional subjects. The third sampling method I used was scanning of membership lists of various Austrian organisations in Britain (Association of Jewish Refugees, Anglo-Austrian Society, Austrian Institute).

Each of these sources has its limitations. Because of the sampling difficulties I met and because of the mixed nature of the sampling strategies eventually adopted, I cannot and do not want to claim that my sample of informants is representative of the target community. It is, however, large enough to establish a sociolinguistic profile of the speech community under investigation, which was the aim of the first research project based on the data set (Eppler 1993) and, more importantly, it provided the speech data for the present project, i.e. the investigation of the syntax of Emigranto.

2.2. The Informants

In the following section I am going to describe the sociolinguistic characteristics of my informants. The sample consists of two slightly different, but overlapping sets of informants. The first set of subjects comprises the approximately eighty informants for

the project aiming at the sociolinguistic profile of the speech community (Eppler 1993, 1994). The second is a subgroup consisting of eleven informants chosen from the original sample for the present investigation of the grammatical properties of Emigranto. I will first describe the larger set of informants, then outline the selection criteria for the sample at the beginning of section 2.2.2, before I provide the relevant sociolinguistic information about the smaller sample on whose data this project is based. A table (Table 0) summarising the sociolinguistic information about the Jewish refugees of the original sample (OS) and the present sample (PS) is provided in the Appendix.

2.2.1. The overall/original sample

As mentioned earlier, the first project aimed at a sociolinguistic profile of the Austrian Jewish refugee community in London. In order to determine whether the linguistic behaviour of this group is different from that of other Austrian bilinguals residing in London, the original project also looked at two comparison groups. The original sample consists of over eighty people, that is, approximately⁵ eighty people appear on the audio recordings collected in 1993. Due to the difficulties I encountered when transcribing and analyzing the material collected at one particular setting, i.e. the AJR Day-Centre, only fifty five speakers could be included in the analysis (Eppler 1993, 1994).

The original sample members form three distinct groups (see also Table 0 in the appendix), i.e. the target community and two comparison groups, which can be distinguished by their age, ethnicity, motivations for emigration and the year of immigration to the United Kingdom. The core group of thirty-four informants are Jewish pre-World War II refugees; they constitute 61% of the original sample. The first comparison group consists of nine Austrian women who married British soldiers after World War II and went to live with their husbands in Britain (17% of the total sample). Twelve speakers belong to the second comparison group, economic migrants who left Austria after 1955 and have been living in Britain since then. They make up 22% of the original sample members.

Twenty one (38%) of the fifty-five informants are male, thirty-four or 62% are female. At the time of data collection, they were between twenty and eighty-six years of age; approximately 80% of them were over sixty. The subjects belonging to the target community and the first comparison group, i.e. the Jewish refugees and the wives of British soldiers, were over sixty at the time of data collection, the second comparison group, i.e. the economic migrants, were between twenty and fifty years old in 1993.

As far as age of onset of English as an L2 is concerned, the original sample can be roughly divided into five groups: bilingual (German/English) home, 0-7, 8-13, 14-19 and over eighteen years of age. For the first three groups, the age of onset is before the 'critical period': 9% of my respondents were brought up with both languages, either in Austria, Britain or the United States; 2% arrived in Britain as children (0-7 years of age). The first group are early bilinguals who are of mixed, i.e. Austrian/British parentage. They all belong to the second comparison group, i.e. the economic migrants. The second group (0-7 years of age) is formed of three Jewish refugees who were very young when their parents had to emigrate to the UK or US. They are heavily English dominant. Another 9% belong to the third group who arrived in the United Kingdom as pre-adolescents (8-13). All five members of this group are Jewish and were brought to Britain on a 'Kindertransport' and either sent to children's camps or raised by British foster parents. They were observed to be English-dominant. The twenty percent of my informants who form the fourth group arrived in the United Kingdom during their adolescence (14-19 years old). The subjects belonging to this group were largely 'employed' as domestic servants and therefore had little or no peer contact with native speakers of English OR members of their own speech community at the beginning of their stay in the United Kingdom. Nevertheless they were observed to be balanced bilinguals. The fifth group, which is by far the largest (it comprises 60% of my informants), arrived in the United Kingdom as adults. They belong to the target community and both comparison groups, i.e. they are Jewish refugees, wives of British soldiers and economic migrants.

Thus the vast majority of my informants, that is eighty percent, are late bilinguals. No formal assessment of my informants' degree of bilingualism was carried out. The description of their bilingual proficiencies will therefore have to remain impressionistic. I would, however, also regard the late bilinguals as balanced, especially from a grammatical point of view. I will return to my informants' language use in more detail in sections 2.5 to 2.7.

Other sociolinguistic information is only available for the core group of informants, i.e. the Jewish pre-World War II émigrés. Before I comment on the educational background of this group, I need to stress that the further or higher education of the majority of refugees was brought to a very abrupt end by the 'Anschluss' of Austria to the German Reich in 1938. Jewish children were not allowed back into mainstream education after the summer of 1938. Some informants resumed their further and higher education in UK

colleges as mature students after World War II, but most of them did not because they had other priorities, like job, housing and family. Despite this, the educational background of the Jewish refugees matches the picture I portrayed in chapter 1, that is, the majority of them are very well educated: 50% attended a Grammar School or Gymnasium, 25% went to University and only 25% to a Secondary School. The women of the sample are slightly less well educated than the men, i.e. out of the 25% whose formal education ended at age sixteen, two thirds are women⁶.

To assess the socio-economic background of my informants, I compiled the following information: post-code, housing⁷, their and their parents' education and occupation and self-assessment of their and their parents' socio-economic status. The overall picture once again matches the description given in chapter 1: all Jewish émigrés are middle class, approximately 14% lower middle class, 70% middle middle class and 16% upper middle class⁸.

2.2.2. The sample used for the present project

The eleven informants I selected for the present project are all Austrian Jewish refugees who arrived in the United Kingdom in the last two years of the 1930s, i.e. they are members of the target community. These eleven informants were chosen for the following reasons: First, it was only among a close-knit network of this group that I observed code-mixing as a discourse mode. That is, the data from this network contain the vast majority of intra-sentential code-switches of the total corpus. As the main aim of this thesis is an analysis of the grammar of code-mixed discourse, these data constitute the natural focus of the investigation. Secondly, the speech style captured on tape from these subjects is most consistently 'casual'⁹ - and thus presumed to be closest to the speakers' vernacular - which makes these data most suitable for (socio-)linguistic analysis. Thirdly, I was most interested in this group from a linguistic, historical, political and personal point of view.

The next paragraph sets out the core group's age, sex and educational and social class background. This information is summarised in Table 0 in the appendix.

All informants whose speech is analysed for the present project were between seventy and eighty-five years of age at the time of data collection. Thus the average age is even higher than in the original sample. All eleven informants arrived in the United Kingdom as adolescents or adults which means that the age of onset of English as a language of everyday interaction is over 14 for all of them. In the original sample 80% of the

informants are late bilinguals; in the sample of informants used for the present project, 100% are late bilinguals.

The distribution of female versus male informants is even more skewed towards women in this sample than in the original (1993) sample: 73% subjects are female and only 27% male (in comparison to 62% vs. 38% in the larger sample).

Six of the eleven subjects forming the sample for the present project were forced out of Gymnasien in 1938, five of them attended Realschulen at the time. The educational standard of the subjects chosen for the present project is therefore a bit lower than the average amongst my Jewish informants. Three out of four speakers who form the close-knit network of speakers that provided most of the heavily intra-sentential mixed data (MEL, LIL, TRU in file Jen1-3.cha), 'only' have secondary education. The belief that code-mixing is only practised by the less educated members of the refugee community¹⁰ is widespread and was largely confirmed by the findings of Eppler (1993, 1994). Five of the eleven informants who serve as subjects for the present project are lower middle class, five are middle middle class and one is upper middle class.

2.3. Ethical issues

All informants had a good understanding about the data collection exercise and its purpose from the initial contact-letter mentioned in the section on sampling. In this letter subjects were also reassured with respect to confidentiality. This allowed them to make an informed decision about whether they wanted to participate. All informants gave their initial consent to being interviewed and tape-recorded by replying to my contact letter.

As I wanted to interview/record informants who belong to a different social group to my own¹¹, I sought advice on social, cultural, religious and other practices which might affect my informants' relationship with myself, and also their willingness to participate. This allowed me to negotiate with my informants in an informed manner, and minimised any concerns they may have had about being exploited by a young Austrian researcher.

In order to minimise the effect of the observer's paradox (Labov 1972: 209), I adopted some of BAAL's suggestions as to how one can circumvent it. I give a brief outline of the strategies adopted in this section but will provide more detailed reasons for the rationale behind them in the next section.

Without lying or being deliberately misleading, I refrained from telling informants the specific objectives of my research (i.e. to collect heavily intra-sententially code-mixed data), but instead, supplied general details (i.e. that I was collecting oral histories and, as

a linguist, my main interest was language use). I provided more information during and after the interviews, if requested, and asked for my informants' permission to use the data.

To the core group of my informants (DOR, MEL, LIL, TRU) I gave details of my research, and asked them, if they would consent to being recorded at some specified time in the future. They agreed and I went ahead with the group recordings. I also obtained permission from them to use the data after the event and informant TRU borrowed the tapes and listened to them.

At some venues (for example the Austrian Institute and the AJR day-centre) I recorded speech from the public at large. In these cases, it was practically impossible to obtain consent from everyone involved. These data are of very low recording quality and I could not use them anyway.

I tried to distract my informants from the immediacy of my research by structuring the recordings around multiple activities (card games, afternoon coffee, for example) so that informants were distracted from monitoring their speech. By the core group of my informants I became accepted as "one of the group". This participant observation distracted my informants from the fact that research was taking place.

To summarise the ethical considerations involved in this project, I ensured that

- a person's decision not to participate/be recorded was respected. One informant, for example, agreed to take part in my study but expressed a desire not be recorded. I respected that decision and took field-notes instead.
- informants' anonymity was respected. I anonymised the data by giving them codes. I, however, also pointed out to my informants that sometimes it is not possible to provide complete anonymity. For example, in those recordings where informants address each other by their first names, I changed the names in the written transcript but the recordings themselves were not tampered with.
- informants were not inconvenienced by my research, and that
- informants have access to the publications resulting from the project.

Despite all these considerations, the original consent I obtained from my informants is no longer adequate since digitalized versions of the original audio-recordings are now available on the world-wide-web (<http://talkbank.org/data/LIDES/Eppler.zip>). This development was unforeseeable at the time of data collection. Unfortunately it is impossible to explain the change in circumstances and/or renew some of my informants' consent because many of them have passed away in the decade ensuing data collection.

2.4. Data collection

The corpus is based on audio-recorded speech data in both interview and natural settings. The data collection period stretched from the beginning of January to the end of February 1993. The original audio-recordings were made on C-60 and C-90 cassette tapes and a tape recorder with a high-quality external multi-directional table microphone¹² which enabled me to record the voices of several people. The original audio-recordings were subsequently digitalized as 22,050 HZ .wav files. The total corpus consists of approximately fifty-eight hours of tape-recorded data. The present project is based on a sample of this, i.e. slightly over fifteen hours of fully transcribed data.

Referring to the *Linguistic Minorities Project*, Marylyn Martin-Jones (1991:50) states that 'the design of research projects and the drawing of samples need to be well grounded in ethnographic observation and clearly informed by historical and social analysis of the migration experience ... and the different local conditions of settlement'. Like Safder and Edwards (1991), Martin-Jones (1991: 47) also stresses the importance of sufficient information about the émigrés' educational background and the degree of access they had to opportunities to learn and use both their languages. Martin-Jones (1991) therefore suggests in-depth interviews with a sub-sample of respondents. In the pilot-study (1992) and the one-to-one interviews I aimed at exactly this, that is, to collect sufficient first-hand information about the historical, social, cultural, educational and linguistic background of my informants, which I could then check against the published literature on the target community (Berghahn 1984, 1988; Mallet & Grenville 2002; Mosse 1991, among others).

Approximately one third of the data were collected in one-to-one situations between the informants and the researcher. With two exceptions¹³, all one-to-one interviews were recorded at the homes of the informants. The choice of location for data collection was motivated by, on the one hand, the age and immobility of many of my subjects and, on the other hand, by research findings (Woolford 1983) which have shown that recordings conducted in surroundings familiar to subjects facilitate the use of the vernacular. The one-to-one interviews can best be described as a combination of spontaneous sociolinguistic interviews and oral history collections.

To overcome the bias of the formal interview, that is the observer's paradox Labov (1972: 209), and create a different speech event, i.e. an informal conversation, I asked my

subjects a few questions and then encouraged them to develop any topic which seemed of interest to them. The one-to-one interviews can thus best be described as spontaneous interviews (Wolfson 1976: 120).

Given the unique migration history of my informants and the traumatic experiences that are associated with their emigration, I furthermore encouraged my informants to tell me their personal histories. Apart from providing me with information about the experiences my informants associate with their two main languages, and which subsequently may have shaped their attitudes towards them, the oral histories furthermore distracted my subjects from the main aim of the interviews, that was to collect casual or spontaneous speech data from them. Any question about my informants' lives between 1938 and 1945 is similar to what Labov (1972: 92) calls 'danger of death' questions. Labov employed this strategy to elicit spontaneous speech from his informants. He defines spontaneous speech as 'patterns used in excited, emotionally charged speech when the constraints of a formal situation are overridden' (Labov 1972: 86). In the case of my informants the 'danger of death' question was real enough to get my informants emotionally involved and draw their attention away from the tape recorder. The channel clues¹⁴ present in the 'historical' sections of the one-to-one interviews confirm this impression.

It was particularly easy to convince my informants that I was collecting oral histories since, firstly, I am genuinely interested in the experiences of Jewish refugees from the NS regime, and secondly, the subjects were delighted about the increasing attention they started to receive from Austrian and other international academic researchers at the time of data collection. Several months prior to my data collection period, an Austrian historian (Wimmer 1993) collected oral histories from the same target community. The London Research Group for German Exile Studies also started their data collection at about that time. I could therefore easily blend into these oral history collection activities without lying or being deliberately misleading, and thus disguise the main aim of my study, i.e. the collection of natural speech data from the target community.

To summarise the motivations behind the particular data collection method used for the one-to-one recordings and to evaluate its success, it was because I combined sociolinguistic interviews with collections of oral histories, that I could elicit casual and spontaneous speech thus gaining the necessary sociolinguistic background information from the informants themselves. Out of the data used for the present project, the audio-recordings with informants TOM and MON (transcribed as Ifen.cha and Imon.cha respectively) were gathered in the context described in the above paragraphs and with

the outlined motivations in mind.

Another way of overriding the observer's paradox (Labov 1972: 209) is to tape-record group sessions between people who normally interact socially. In group-sessions, informants are brought together and recorded while in the process of interacting with each other (Wolfson 1976: 123). Labov (1972) and Wolfson (1976), among others, found that the normal patterns of group interaction will overcome the constraints produced by the subjects' knowledge that they are being observed and recorded. That is, in group-sessions the interaction of members overrides the effect of observation, and gives a more direct view of the vernacular with less influence of the observer.

The majority of data was collected among groups of two to four speakers in informal settings, either in informants' homes or other venues frequented by the target community. The interviewer's ethnic background, her nationality and her familiarity with the setting and participants allowed her to enter local network situations, such as card game and gossip sessions, 'Feierabend Club' meetings and lunch breaks at offices.

Out of the data used for the present project, Ibron.cha was recorded at the core informant's (DOR) home, with their daughter (VIV) and grandson (NIC) present for part of the recording. Iariel.cha was recorded at informant ALA's home. He and the researcher were joined by a female friend of ALA's, EAR, approximately half an hour into the recording. Ihog.cha was also recorded at the informants' home. Both informants, who are married, were present throughout the audio recording.

The most substantial data set used for the present study (Jen1 - 3.cha) were recorded over several weeks at informant TRU's home in St. John's Wood, London NW8. The four speakers (DOR; TRU; LIL and MEL) who appear throughout the approximately eight hours of audio-recordings not only met several times a week at the AJR Day-Centre but also gathered once a week for a game of cards (Kaluki) at TRU's home. The researcher was invited to join them and participate in the game. These data are thus also collected using participant-observation technique. The recording equipment was on at all times. The participants, however, stopped paying attention to it as soon as they became immersed in conversation and/or the game of cards. Evidence supporting this assumption comes from occasional surprised references to the ongoing recording when informants, for example, announce a visit to the bathroom.

One sixth of the data were recorded at the day-centre of the Association of Jewish

Refugees in West Hampstead, London. The day-centre was open to members four days a week. The activities there were organized by social workers who schedule a regular routine of bridge, ballroom dancing lessons, guest lectures, concerts, outings to places of interest, quiz- and bingo-evenings etc. The day-centre was a particularly good place for gathering natural linguistic data, in that thirty to sixty members start arriving for the sessions up to an hour early, and spend that time and the time in between the various activities in conversation about everyday business. I thus did not even have to bring my informants together for groups recordings, they voluntarily gathered and I could use participant observation technique. My presence at the day centre, once accounted for, became unobtrusive because I was involved in running the day-centre as a voluntary worker. Tape-recordings of eight hours of highly informal, lively verbal interchanges were made. Unfortunately - and despite the use of different recoding equipment - these data are of low-quality and extremely difficult to transcribe. Usually several people are talking at the same time and interruptions are frequent. The amount of overlap makes it difficult to identify individual contributions. These data could not be used for the quantitative analysis. In a follow-up project I hope to find means to make these data analyzable. The main reason I would like to include these data in the analysis is because they are similar to the data of the group recordings made with informants DOR, MEL, LIL and TRU (Jen1-3.cha), i.e. they contain a large amount of intra-sentential code-mixing.

The data presented in this study, then, range from informal conversations between family members and friends to more formal and self-conscious discourse used in discussing concepts such as language, politics, history and culture. The majority of data are highly informal un-monitored speech in spontaneous and casual style. A survey of the data used for the present project, i.e. slightly over fifteen hours of fully transcribed data with an audio link to the original recordings (<http://talkbank.org/data/LIDES/Eppler.zip>), is presented in the table below.

File name	duration	duration	participants
One-to-one spontaneous interview, Pilot Study			
Imot.cha	45 min		MON & EVA
One-to-one spontaneous interviews			
Isper.cha	80 min		ELI & EVA
Ifen.cha	100 min		TOM & EVA
Group recordings (one-to-two)			
Iariel.cha	100 min	23 min	ALA & EVA
		77 min	ALA, EAR & EVA
Ihog.cha	100 min		FRI, SOP & EVA
Core Corpus, participant observation group recordings			
Ibron.cha	90 min	46 min	DOR & EVA
		22 min	DOR, VIV & EVA
		22 min	DOR, EVA, VIV & NIC
Jen1.cha	140 min		DOR, MEL, LIL, TRU & EVA
Jen2.cha	160 min		DOR, MEL, LIL, TRU & EVA
Jen3.cha	100 min		DOR, MEL, LIL, TRU & EVA
Total			
9 cha.files	916 minutes 15 h 16 min		14 participants

Survey of data

Before I move onto code-choice and a description of language use in the data, I have to describe my informants' two codes in more detail. This naturally requires a large amount of generalisation and does not adequately reflect the individuals' language use. This, however, will be outlined in more detail in section 2.7. and illustrated in the detailed grammatical analysis of the main section of the thesis.

2.5. My informants' two codes

2.5.1 German

I have already introduced the two varieties of German in use in my informants' place of birth in section 1.1.6. I will start by briefly summarising this in order to show that a characterisation of their English poses a completely different challenge. When describing my informants' German, the individuals have to be allocated to a place on the continuum between Standard Austrian German (SAG) and the Viennese German accent/dialect (VGD). In English it is not the varieties they use that are different, but their proficiency in their second language.

Growing up in Vienna, my informants could acquire Standard Austrian German or the Viennese dialect or both. As mentioned in sections 1.1.4. and 1.1.6, all my informants can speak Standard German, though not all of them acquired it in the home (e.g.

informant TOM). The majority of them are bi-dialectal and only the upper-middle class ones do not have access to the Viennese accent and dialect. The lingua franca in the Jewish community in Vienna was Standard Austrian German. For my work, the differences between the two varieties are, however, not particularly relevant. This is, firstly, because my informants almost exclusively use the Standard Austrian dialect in the data I collected from them and only occasionally 'switch' into Wienerisch. Secondly, the purpose of this study is code-switching between German and English, and not dialect switching between Standard Austrian German and the Viennese dialect. Thirdly, the differences between the two German varieties are predominantly phonological in nature and my focus is on the morpho-syntax of my informants' speech. Grammatical variation in my informants' German is highlighted in the transcripts (by an asterisk to indicate ungrammaticality in Standard Austrian German or with a comment [%com] on the main speaker line) and, where relevant, discussed in the analysis.

Excellent summaries of the phonological differences between Standard Austrian German and the Viennese accent, in a social context, can be found in Dressler et. al. (1972), Dressler & Wodak (1982) and, Mosmüller (1987, 1991). As the transcripts of my data do contain references to a Viennese pronunciation of certain lexical items – though no phonetic transcription - I will very briefly summarise the main phonological differences between my informants' two German varieties.

Unlike Standard Austrian German, the Viennese accent has no Umlaute and no diphthongs. Standard German /y/ and /ʏ/ correspond to /i/, and, /ø/ and /œ/ corresponds to /e/ as in the following examples: SAG /glyk/ *Glück* 'luck' is pronounced /glɪk/ in the Viennese accent, and SAG /ʃø:n/ *schön* 'beautiful' is /ʃe:n/ in Viennese. An example from the corpus illustrating /ø/ vs. /e/ and contraction is

*LIL: her'st [= hoerst du] # wo du dir die herausziehst +... Jen2.cha, line 1260

The Standard Austrian German diphthongs correspond to long monophthongs in the Viennese accent: SAG /braet/ *breit* 'broad' is pronounced as /brɑ:d/, /vaɪs/ *weiß* 'know' is /væ:s], /baum/ *Baum* 'tree' is /bɑ:m/, and /hœtə/ *heute* 'today' is /hæ:t/ in the VGD. The contrast between SAG /aë/ (or /aɛ/) and colloquial Viennese /ɑ/ is particularly relevant for my data as the indefinite article *ein* is generally not pronounced as /aën/ but as /ɑ:/. In unstressed positions /ɑ:/ gets reduced to /ə/ or schwa /ə/, like in English. A monolingual German example from my corpus, which also illustrates the way this

pronunciation has been transcribed in the data, is

*TRU: kannst nicht a [: ein] bissl schieben?

Jen1.cha, line 178

In German/English mixed utterances, however, the phonological similarity between the casual Viennese and English pronunciation of the indefinite article frequently makes it difficult to decide which language the determiner is in. In Jen3.cha line 201, for example, I tagged¹⁵ it as German because the first component of the following loanblend is German

*DOR: das is(t) a@4 [: ein] gruppen+**booking** .

Jen3.cha, line 201

In Jen3.cha line 234, on the other hand, I tagged it as @u for undecided because the indefinite article is the transition point from German to English.

*DOR: wirklich -! a@u **lovely atmosphere** .

Jen3.cha, line 234

Thus for tagging purposes the phonological similarity between the Viennese and the English pronunciation of the indefinite article causes problems. For speakers who switch between the two codes, on the other hand, it seems to be an 'equivalent category' (Muysken 2000) which establishes a congruence/neutralisation site (Sebba 1998, Myers-Scotton & Jake 1995, Clyne 1987) which serves as ideal transition point.

The third main phonological difference between the two varieties of German used by my informants is that - when in Viennese accent speech mode - they use /ɔ/ instead of Standard Austrian German /ɑ/, as in ['fɔ:de] versus ['fatə] Vater 'father'. An example of /ɔ/ versus /ɑ/, embedded in a very Viennese idiomatic expression, from my corpus is

*DOR: gengan's [: gehen sie] baden [%pho: boden] .

Jen2.cha, line 1486

One further difference between Standard Austrian German and the Viennese dialect in casual speech is worth mentioning as it occasionally affects the representation of prefixes in the transcripts. The elision of schwa in the prefixes *be-* and *ge-* in casual Viennese pronunciation can lead either to reduction or complete deletion of the prefixes; ['gre:t] for *ge-redet* 'talk-ed' represents reduction and ['ksɔkt] *ge-sagt* 'said' represents complete deletion (plus assimilation of the initial consonant to the following voiceless

consonant). An example illustrating elision of schwa in *ge-* from the corpus is

*DOR: I **wonder** , wem sie nachg'radt [= takes after] . Jen2.cha, line 153

Before I move onto grammatical aspects of my informants' German, it is worth mentioning that there is some phonological influence from Yiddish on their pronunciation of certain German lexical items. Yiddish phonology is mainly detectable in very casual stretches of the data, as in the following example.

*LIL: 00wir sind boese [%pho: behze] -' . Jen2.cha, line 2148

The lexical differences between the Viennese Dialect and Standard Austrian German are so considerable that they led to the publication of several dialect dictionaries. These differences, however, are unproblematic for the present study, as when they do affect grammar (as in case assignment and valency of verbs, for example) they can easily be indicated in the transcripts and the analysis. The orthographic representations for Viennese dialect words differ considerably in the various publications and web-sites. In the transcripts I use the orthographic representations suggested by Teuschl (1990). A few examples of Viennese dialect words from the corpus are

*MEL: ich hab(e) einen gachen [= Zorn] gehabt gestern Jen2.cha, line 110

*TRU: if [/] wenn eine sehr schierch [= haesslich] ist , Jen2.cha, line 261

*MEL: meines auch # mein ganzes gerstl [= Geld] is(t) weg . Jen2.cha, line 1980

Morphological and syntactic differences between Standard Austrian German and the Viennese dialect are fewer than phonological and lexical ones. The Viennese German dialect, for example, has a derivational morpheme that is not used by speakers of Standard German but crops up in my data, namely *-e(r)l* as in *Kinderl* 'small child'. This diminutive has the same function and meaning as Standard German *-chen* and *-lein*, as in *Kind-chen*. An example from the corpus is

*DOR: und die **pebble**-n diese [/] wie heisst das noch ?

*DOR: diese steindeln xxx . Jen2.cha, lines 577-578

The Viennese dialect also differs from Standard Austrian German in inflectional morphology. In the Viennese dialect the nominative singular of feminine nouns can end in *-n* rather than *-e*, as in *die Taschen* (Jen1.cha, line 286).

Finally, the grammatical gender of nouns is subject to variation not only between German, Swiss and Austrian German (Carstensen 1980), but also between Standard Austrian German and the Viennese dialect. In the dialect *der Spektakel* 'spectacle' and *der Bündel* 'bundle' are the norm, both of which are neuter in Standard Austrian German. The preposition *auf* assigns dative case in Standard Austrian German, *auf den Füßen*. In the Viennese dialect we find syncretism, as in the following example

*DOR: ja # tut dann weh auf die fuess(e) .

Jen2.cha, lines 583

I will discuss these differences in more detail in the chapter on gender assignment.

All informants who left Austria after the critical period, this includes all eleven speakers this present project is based on, are still competent native speakers of German. Signs of structural modification, convergence¹⁶ and/or attrition¹⁷ of their L1 are, however, noticeable. The most frequent structural modification in the German data is ungrammatical word order, mainly due to verb placement. The construction types that are ungrammatical according to Standard Austrian German grammar involve V2 over-generalisation, non-final placement of main verbs and/or ungrammatical extraposition of adverbials, indirect and even direct objects¹⁸, and ungrammatical word order positions of verbal negation markers. Other attrition phenomena involve the use of pronouns, especially reflexive and possessive pronouns, and ungrammatical subject – verb agreement¹⁹. Attrition of German, i.e. the L1, is most advanced in speakers DOR, TOM and ELI. One of the most extreme examples of word-order modification/ convergence/attrition (possibly also involving relexification) in the data is

so ist er auch heute wahrscheinlich mehr gewoeht zu hoeren Deutschen sachen

Isper.cha, line 1144

instead of:

heute ist er wahrscheinlich auch nicht mehr gewoeht Deutsche Sachen zu hoeren

Given the components of linguistic structure affected by contact-induced language change in the speech of my informants, and the fact most examples involve a simplification of structure and/or structures that do not match either German or English completely, attrition and convergence may be the best terms to describe the observed modifications in my informants' German.

2.5.2. English

As mentioned earlier, in English it is not the varieties that my informants use that are different, but their proficiency in the second language. All those who learned English at school in Austria were taught Standard English, and this is where many of their basic grammatical knowledge stems from. The English the immigrants learned from native speakers in the United Kingdom is also Standard English, because the areas in which the Jewish pre-World War II refugees settled are ones in which this variety of English is spoken.

No formal assessment of my informants' L2 competence was carried out. The following description is therefore impressionistic. It is furthermore both, incomplete and over-generalising. That is, not all the areas of English phonetics/phonology and grammar in which my informants have incomplete proficiency can be discussed because they are so widespread, and the errors identified and discussed in this section are also not present in all my informants' English.

The most striking characteristic of the English spoken by the core group of my informants, i.e. the eleven speakers chosen for this study, is the fairly strong German accent. This is not surprising, as the age of onset of English as a second language is well after the critical period for all of them. Naturally the Austrian accent manifests itself most in those sounds where the phonological inventory of German differs from English Received Pronunciation. The English dental fricatives /θ/ and /ð/ are frequently realised as /t/ and /d/. English words containing the voiced labio-velar approximant /w/ are often pronounced with the labio-dental fricative /v/, as in German, and my informants' interlanguage realisations of /w/ regularly lack lip rounding. My informants are more aware of, and self-conscious about, these consonant contrasts than they are about their interlanguage realisations of English vowels and diphthongs. Generalisations about my informants' pronunciations of these sounds, however, do the various realizations found in the data even less justice than the remarks made about their English consonants. As the aim of my project is not an analysis of my informants' accents in English, I refer readers interested in this aspect of the data to the audio files of the original sound recordings on <http://chilides.psy.cmu.edu/lides/eppler.html>.

From a morphological and syntactic point of view, my informants can be regarded as highly proficient speakers of Standard English. This, however, does not mean that they do not make mistakes in their use of English. As I am exclusively dealing with

performance data, it is furthermore not always easy to decide whether ungrammatical constructions represent production difficulties or a lack of morpho-syntactic competence (the same naturally holds true for German, see footnote 16). Because of this difficulty, I will only list those areas of English grammar in which errors are frequent enough to rule out production difficulties.

As in German, the main sources for errors are word order and the verbal system, especially tense, aspect and mood. Informant DOR's preference for extraposing objects applies to both her languages. In the following example she even places an adverbial before the direct object(s).

***DOR: but she said they only speak at home German [/] eh English .**

lbron.cha, line 1625

Two examples illustrating ungrammatical properties of verbs (mood and tense in the first example, and aspect in the second example) are

***DOR: and if he would know, how long we are here, +...**

lbron.cha, line 2506

***ALA: they shouldn't think I make brotherly love with the Germans just because I am originating from German [? parents]+/.**

lariel.cha, line 168-9

In construction types in which speakers avoid the repetition of main verbs by using auxiliaries or *do* instead (coordination, clausal comparatives and tags), my speakers have a tendency to use auxiliaries where native speakers of English would use *do*.

***DOR: he's got a stronger accent than I have .**

lbron.cha, line 1662

A similar observation can be made about my informants' use of pronouns and anaphors, i.e. they occasionally use the wrong pronoun or anaphor to go with the antecedent, as in the following example

***TRU: anyway # and # it went round three times that it [? there] was no bidding .**

Jen1.cha, line 1643

Other areas of grammar that are marked by a relatively high frequency of errors in my informants' English are adverb(ial) placement (which frequently goes hand-in-hand with

object extraposition, as we saw in Ibron.cha, line 1625), which of course is a word order issue; and morphological marking of adverbs and comparison of adverbs and adjectives, although I am not sure the following example is not a deliberate error

***TRU: +, because you get the most filthiest dirtiest [>] British people .**

Jen1.cha, line 1548

and the use of prepositions. One example illustrating the latter error type is

***ELI: and now she is studying history in Warwick University .**

Isper.cha, line 404

I would like to conclude my discussion of the main error types in my informants' English with an English relexification of a German (idiomatic) construction

***DOR: she has got a gift for it .**
sie hat ein Talent dafür

Despite the identifiable areas of English grammar in which some of my informants have not achieved full proficiency, the majority of them are highly proficient speakers of Standard English²⁰. Various social, historical and even ethnic factors are responsible for the high degree of bilingualism among people who acquired their L2 as adults. Most of them have already been mentioned in chapter 1. I would, however, briefly summarise them. First, German was regarded as the language of the enemy by the majority of the British population between 1940 and 1945. Many informants were reluctant to speak German in public during wartime. This situation, or at least the way it was perceived by the refugees, prevailed up to the late 1950s. Secondly, almost all Austrians (male and female) living in Britain had to seek employment for financial reasons and/or wanted to participate in British 'war efforts' in order to be regarded as 'friendly enemy aliens'. The third important reason why most refugees wanted to learn 'good English' (IGot) relates to their cultural background. Seventy percent of the sample members belonged to the Viennese Bildungsbürgertum, i.e. the educated middle class, and for them one way of expressing 'culture' is by language use. The German language is seen as an integral and important part of German culture and therefore they try to maintain it. The core group of my informants transferred this attitude to English and they took conscious steps to learn and use correct English and to acquire a substantial English lexicon.

2.6. Factors influencing language choice

The two languages all my informants can choose from are German and English. Although all the pre-World War II émigrés are Jewish, only one of them speaks Yiddish. This is because all of my respondents are from non-orthodox families who spoke German in their Viennese homes. The only informant who knows Yiddish (GRU) learnt it when living with and working for an orthodox Jewish family in Stamford Hill, London in the early years of the 1940s.

Reported patterns of language use at home varied considerably amongst my informants at the time of data collection, but a general trend can be identified. Most of them spoke only or mostly English when their children were young. When the second-generation moved out of their parents' households, the older generation could have used both their languages. In 1993, however, most bilingual couples still spoke mainly English and only occasionally German in their private homes. The AJR day-centre, which has become a second home for many of the widows and widowers among the core group of my respondents, is a setting where German and 'Emigranto' are used most of the time.

As observed in many other studies of code-mixing (Gumperz 1982, Poplack 1988, Poplack & Meechan 1995, Myers-Scotton 1993a, among others), the amount of code-mixing in the data correlates strongly with the situation and the formality of the speech style. That is, the more formal the situation and speech style, the less code-mixing and vice versa. Thus the amount of code-mixing, especially intra-sentential mixing, steadily increases in my data from the one-to-one interviews, to the one-to-two interviews, to the participant observation group recordings with four speakers plus the researcher.

The main factors influencing code-choice in my data are again not different to the ones found in other studies (Gumperz 1964, Gumperz 1982, Heller 1988, Poplack, Sankoff & Miller 1988, Myers-Scotton 1993). They are situation, participants and topic and bilingual proficiency. When the last factor plays a role, it overrides all others.

The situational context of the data collection appears to be the most influential factor determining my informants' language choice. The one-to-one and one-to-two interviews are predominantly monolingual²¹. The initial phrases of politeness were usually exchanged in English, but then the respondents chose the language of conversation. When the informants were more comfortable speaking English, they tended to continue

the conversation in that language. The language of the one-to-one and one-to-two interviews tended to be German when the informants were fluent and comfortable enough to hold the conversation in German, and when they wanted to accommodate²² to the researcher's first language. Some subjects also asked the researcher which language should be used for the purpose of data-collection. Since I did not set out to collect data in either language in particular, I usually left the language choice to the informants. Some informants switched to English during the interview when they realised that I was fluent enough in English to hold the interview in their language of habitual use. Others tried to demonstrate their bilingual competence by changing language mid-interview²³.

The second most important factor influencing my informants' language choice appears to be the participants. In all situations in which a third party joined the main informant and the researcher in one-to-one-settings (e.g. FID in Imon.cha, the waitress in Ifen.cha, VIV and NIC in Ibron.cha), it was this person who determined the language of interaction. When a third party triggered a change in the language of the conversation, it was towards English in all observed cases. Telephone conversations conducted by my informants during the recordings, be it with members of the same speech community²⁴ or others, were also exclusively in English. In the one-to-two recordings the informants tended to use the language they normally use with each other (cf. Iariel.cha) and/or the language of the home, which again is English in most cases²⁵.

The topic of the conversation did not determine the base language of the conversation in one-to-one and one-to-two interviews. It, however, frequently triggered a change in code for the time a certain topic was discussed. Topic-related code-choice in my data is strongly related to my informant's bilingual lexicons for certain semantic fields. This again depends on the age at which they shifted from German to English as a language of every-day interaction. Topics that regularly triggered language change from German to English, or heavy borrowing from English, include health and health care, public and private transport, and other topics of adult life. As approximately 60% of my informants from the target community emigrated as adults, they only encountered these topics when already living in the United Kingdom and therefore lack the German terminology associated with them. Topics that frequently triggered language shift from English to German, or heavy borrowing from German, predominantly revolve around German culture, i.e. music, opera, operetta, theatre or literature.

Other factors that clearly have an influence on bilingual language use and code-choice in

my data are ethnicity, sex/gender and political ideas/ideology. When the researcher revealed her own ethnic background, the social distance between the informants and her generally decreased. This frequently led to a less formal situation, which again encouraged a more casual speech style, which, in my data, is also associated with increased use of code-mixing and other language contact phenomena. A similar mechanism can be observed in the data when female (e.g. lbron.cha) and/or political (e.g. lros.txt) bonding is taking place between the informants and the researcher.

Code choice was not an issue in the participant observation group recordings because then the informants did not accommodate to the researcher and continued using their habitual mode of interaction, i.e. the mixed code Emigranto.

In summary it can be said that language choice only played a role in audio recordings made in one-to-one, and partially one-to-two, contexts. In these recordings it is the formality of the data collection situation that exerts the strongest influence on my informants' code-choice. A monolingual mode was felt to be the only appropriate option. The choice of German or English then largely depended on the informants' bilingual proficiency, their perception of the researcher and the purpose of the data collection, and other participants. A decrease in the perceived formality of the situation in combination with increased closeness on the solidarity scale through bonding along ethical, gender or ideological lines, tended to facilitate the use of German and/or code-mixing. The type of code-mixing used in interview settings, however, is of the less intimate or 'flagged' (Poplack, Wheeler & Westwood 1989: 206) type, i.e. cultural and established loanwords, language contact phenomena accompanied by pauses or meta-linguistic commentary and code changes which fall into a well established set of discourse functions prevail. In the participant observation group recordings the presence of the researcher did not influence the overall mode of verbal interaction and therefore inter- and intra-sentential switching prevails in spoken data collected in relaxed in-group situations.

2.7. Language use in the fully transcribed data

Of the fully transcribed one-to-one interviews, lmot.cha is entirely in German, with only one situational switch to English when a tenant of MON's briefly joins her and the researcher in the living room. The language choice reflects MON's general linguistic preference.

*MON: sogar wenn vier beisammen sind, dann rede ich ungern mit einer

Deutschsprechenden Englisch .

*MON: was blood ist,, nicht wahr ?

*MON: man muss [/] man muss oder es ist ein fehler .

*MON: und ich weiss, manche Leute denken

+” Ach Gott, wenn ich komm, dann wird wieder Deutsch gesprochen,
und dann verstehen die wieder nichts, die nicht Deutsch koennen .

*MON: also man ///muss schon .

lmon.ch, lines 989-990

The interview with ELI, on the other hand, is almost exclusively in English. German is only used for names and titles and German culture-specific terminology, and when the researcher tries to elicit some German from her informant. It soon becomes clear, however, that ELI is English dominant and when the researcher realises how uncomfortable the informant feels speaking German, the conversation is continued in English.

The interview with TOM is predominantly in German. TOM's German, however, is characterised by attrition, syntactic interference (from English) and/or convergence towards English, and interspersed with a lot of language contact phenomena. TOM's speech contains many borrowings (mainly from English), code-switches, relexifications, semantic loans, calques and loanblends.

lareil.cha is in English when the researcher is on her own with ALA. As soon as EAR arrives, German becomes the base language. This language choice may be influenced by several factors. First, ALA and EAR's recently deceased husband always spoke German together, so the language of habitual use between the two informants is German. Secondly, EAR and her husband had recently also been informants for an oral history collection (Wimmer 1993), which was conducted in German. EAR may have assumed that I was also aiming to collect data in German. Thirdly, EAR possibly tried to accommodate the researcher by using her first language. ALA's attempts to re-establish English as the base language during the recording are blocked by EAR.

lhog.cha is almost exclusively in German, with only a few English culture specific borrowings. The researcher now (2004) knows that the language normally used in the home is English, interspersed only with a few borrowed German culture specific terms. This unusual choice of base language for the recording was determined by SPH (not FRI) and possibly influenced by a desire to accommodate the researcher, who was perceived as a 'young visitor from home'.

Ibron, the first meeting between the central informant and the researcher is in German, interspersed with a lot of code-mixing and borrowing. As soon as VIV (DOR's daughter) arrives, however, DOR and EVA switch to English because DOR had already informed EVA that VIV is not comfortable speaking German (cf. Ibron lines, 257-261)²⁶. NIC, DOR's grandson, speaks German up to GCSE standard and gets by when in German speaking countries, but is not fluent enough in his grandmother's first language to hold a conversation in it.

The language use in the group recordings when participant observation technique is used as a data collection method, is markedly different from the one-to-one and one-to-two interviews. Intra- and inter-sentential code-switching prevail. The individual speakers (DOR, MEL, LIL, TRU) use varying amounts of German and English (see Table 2, Chapter 6), but the overall mode of interaction is bilingual. Most of the mixed data on which this project is based are from the slightly over eight hours of audio-recordings made among this group of informants.

Once the audio-data had been collected, I faced the task of how to transcribe them. For the project aiming at a sociolinguistic profile of the Austrian Jewish refugee community (Eppler 1993 & 1994), I only transcribed passages from the recordings that contained code-switching and other language contact phenomena. This was felt to be inadequate for an analysis of the morpho-syntax of my informants' mono- and bilingual speech. Fortunately, by the time I had decided to re-transcribe my data, a group of European researchers working on bilingual speech, i.e. the LIPPS (Language Interaction In Plurilingual and Plurilectal Speakers), had started developing a transcription system for bilingual data. Thanks to Penelope Gardner-Chloros I became involved with the LIPPS group in 1995 and could contribute to the guidelines for transcribing bilingual data (The Lipps Group 2000) and the development of LIDES (Language Interaction Data Exchange System). I will outline the transcription of my data in combination with the aims of the LIPPS group and the purpose of LIDES in the next chapter.

¹ It has been estimated that three quarters of the ennobled Jewish families in Vienna between 1787 and 1847 converted to Christianity (Wistrich 1989: 22).

² Combining information from census questions on languages spoken (German and English), ethnicity (Jewish) and dual citizenship (British and Austrian) may have yielded a fairly accurate figure, but since a more convenient way of sampling the target community was available, I opted against using census data.

³ Informant FRI (Ihog.cha), for example, adopted the English surname that was listed after where his German surname would have been in the London telephone directory. Other informants

simply translated their German surnames into English (IDut).

⁴ I would like to thank Dr. Netzer for establishing the contact with Dr. Zerner, who spent his childhood and adolescence in the UK but returned to Austria to work as a solicitor in Vienna.

⁵ The exact figure is difficult to determine since the number of people caught on tape at the AJR Day Centre cannot be made out on the audio recordings. The figure given, i.e. approximately eighty people, is based on the number of people gathered within reach of the microphone.

⁶ Information about the educational background of my informants' parents is too fragmented to provide exact figures, but where it is available, a similar picture emerges: for the time, i.e. very early 20th century, an unusually high percentage attended Gymnasien or University and the fathers are slightly better educated than the mothers.

⁷ None of my informants live in council housing. All of them are owner occupiers of at least two bedroom properties.

⁸ Information about the socio-economic background of my informants' parents is too fragmented to provide exact figures or even percentages, but most of them seem to have been middle class. The social distinctions between this generation, however, seem to have been more marked than among my informant's generation.

⁹ Casual style in the Labov (1978) sense, i.e. everyday speech used in informal situations, where no attention is directed to language. The fact that more of the Jewish refugees were recorded in groups than in one-to-one interviews had a positive effect on the 'naturalness' of the speech style in these recordings.

¹⁰ 'They have lost their mother tongue and they have never acquired English sufficiently to use it fully and completely. [i.e. they code-mix] [...] I think you will find that the bulk of the people who go to this centre [the AJR day-centre] have never really got beyond a certain point in English and I think this is not necessarily (sic!) determined by their social background or their jobs' (IFra).

¹¹ Most of my informants were approximately thirty years older than myself at the time of data collection; I'm only quarter Jewish and that on the paternal side; and I had limited experience of every-day life in the UK at the time of data collection.

¹² I would like to thank the audio-visual unit at University College London for providing the recording equipment.

¹³ One interview was conducted at the researcher's home and another one in a quite upstairs room of an Austrian cafe in SW London.

¹⁴ Labov (1972: 94-95) lists as channel clues for casual speech modulations of the voice production which affect speech as a whole; contrasting values of tempo, pitch, volume and breathing; laughter and overlaps.

¹⁵ In the LIDES transcribed corpus all words are tagged for language. This will be explained in more detail in Chapter 3.

¹⁶ Convergence is a process through which two or more languages in contact change to become more like each other. Thomason (2001: 89) states that the point of talking about convergence is that the convergent structures may 'have no single source: ... they resemble both languages in part but do not match either one completely'. Given this definition of convergence and the fact that word-order adjustments are typical examples of convergence, this may be the most appropriate term to describe the structural modifications observed in my informants' speech.

¹⁷ Attrition can be defined as 'the loss of vocabulary and simplification of structure without any compensating additions in the form of borrowings of newly created structure' (Thomason 2001: 12).

¹⁸ The seven native speakers of German I asked for grammaticality judgements on a selection of examples consistently rank extraposition of direct objects worse than extraposition of adverbials. They furthermore regard AUX-S-V constructions acceptable, if they assume the underlying grammatical competence to be that of the Viennese dialect and not of Standard Austrian German.

¹⁹ Interestingly enough ungrammatical subject-verb agreement mainly involves number, which makes me think these errors are caused by production difficulties rather than by L1 attrition.

²⁰ I identified approximately 90 ungrammatical English sentences in the 33,500 English words of the core corpus.

²¹ The first meeting between the researcher and the core informant DOR may be seen as an exception because it contains more code-mixing than any of the other one-to-one interviews. The language distribution in this interview is still strongly biased towards German (16 German word tokens to 1 English word token).

²² Willingness to accommodate seemed particularly strong when the researcher was perceived as a visiting Austrian academic.

²³ This was mainly observed among male informants.

²⁴ This supports the impression that English is the every-day language of interaction in the speech community.

²⁵ lhog.cha is in exception in this respect; see section 2.7.

²⁶ *DOR: aber sie spricht noch immer # wenn ich nicht dabei bin .

*EVA: wirklich ?

*DOR: sie schaemt sich .

*DOR: sie glaubt, 00sc sie macht fehler +...

3. LIPPS, LIDES and the transcription, coding and automatic analysis of the data

At the time the need for fully and consistently transcribed data emerged in the present project, no co-ordinated standards for transcribing and coding spoken multilingual data were available. This deficit was recognized by the LIPPS Group (Language Interaction in Plurilingual and Plurilectal Speakers).

3.1. The Language Interaction in Plurilingual and Plurilectal Speakers (LIPPS) Group¹

The LIPPS Group is an international group of researchers whose short-term aim was to develop basic guidelines for transcribing and coding bilingual data, i.e. to establish transcription and coding standards for language interaction data. The group's long term aim is to set up a computerised database of mixed-language (code-switching) data, i.e. the Language Interaction Data Exchange System (LIDES), and to develop software to enable the maximum use of the database.

The idea of setting up a research group for encouraging the study of language interaction phenomena was first conceived by Penelope Gardner-Chloros (Birkbeck College), Roeland van Hout (Tilburg University), Melissa Moyer (Universitat Autònoma de Barcelona) and Mark Sebba (University of Lancaster) at a meeting in Ljouwert/Leeuwarden in 1994. I joined the group at the subsequent meeting in London in January 1995. The core group was formally constituted in Barcelona in September 1995, under the name of LIPPS - Language Interaction in Plurilingual and Plurilectal Speakers. It is organised into

- a Steering Committee, composed of the founding members, whose task is to coordinate activities, obtain funding and organise new meetings.
- The Advisory Committee, formed by Pieter Muysken, François Grosjean, Maria Teresa Turell, Marianne Starren, Jeannine Treffers-Daller, Jacomine Nortier and Margaret Deuchar, provides specialised support to the on-going project.
- A group of post-graduate researchers (Ruthanna Barnett, Eva Codó, Montse Forcadell, Maria Carme Torras and myself) who are engaged in research in the field of language interaction.

and other members who used and/or contributed data as well as ideas for setting up the

system.

At workshops in Nijmegen (April 1996) and Barcelona (January 1997) the LIPPS group discussed and explored proposals for the transcription and coding of bi- and multilingual speech data. The bi- and multilingual corpora available at the time, including those collected by the members of the LIPPS group, were in disparate forms, and coding and transcription practices varied widely. The aim of the group therefore was to establish recommendations for transcribing and encoding bilingual data in order to standardise the existing systems and make them more accessible for a wider research community. This aim was achieved with the joint publication of the *LIDES Coding Manual, 'A Document for Preparing and Analysing Language Interaction Data'*, as a special issue of the *International Journal of Bilingualism* (Volume 4, Number 2 June, 2000; ISSN 1367-0069). The LIDES Coding Manual contains the recommendations developed so far for transcribing and encoding bilingual data. The LIDES recommendations are based on a successful existing system for child language data, CHILDES (Child Language Data Exchange System, McWhinney 2000). I will describe the system when illustrating the transcription process of my data (Section 3.4.)

3.2. The Language Interaction Data Exchange system (LIDES)

Considerable amounts of bi- and multilingual data, involving many different languages and dialects, have been collected through projects in many countries, but no co-ordinated system, specialised corpus or software existed for the transcription and analysis of language interaction data before the publication of the LIDES coding manual. Researchers in other fields, such as language acquisition for example, have both standard ways of transcribing and coding data, and international databases to which they can contribute and which they can draw on for comparative data, e.g. the CHILDES system. So while there is a lot of often painstakingly collected bilingual speech data in existence, it seems likely that the endless collection of more data for analysis will no longer constitute the most productive application of research efforts.

The importance of creating the LIDES database lies firstly, in the possibilities it offers to maximise the use of available data. Secondly, it allows researchers to make comparisons between different sets of data. Thirdly, fully transcribed data sets will give

researchers access to the context in which language contact phenomena occur, rather than having to work on isolated examples. This seems to be the only means to provide the answer to some of the essential questions currently asked in the field of language interaction. Many research questions in the area of bilingualism are not answerable² - and therefore may not even be asked - until researchers working on different language combinations, in different social contexts and drawing on different research traditions, are in a position to exchange and compare data freely with each other.

The linguists constituting the LIPPS group hope that the LIDES project will not be just more data on more language combinations. We also expect research methodology to change, not only because dedicated tools for language interaction analysis will become available, but also because the regular occurrence or absolute non-occurrence of specific phenomena will become valuable arguments in scientific disputes. That is, a database of bilingual speech will enable probabilistic research into language contact phenomena and other linguistic aspects of bilingual speech and should thus bring us closer to establishing whether, for example, the syntactic constraints on code-switching proposed in the literature are absolute or probabilistic. A standardised database like LIDES should furthermore help identify universal aspects of bilingual speech. (See Sokolov & Snow 1994 for the relationship between CHILDES and research methodology in first language acquisition.)

The creation of a language interaction data exchange system (LIDES) requires a common set of transcription and coding guidelines. The foundations for this pre-requisite of the database were laid with the publication of *The LIDES coding manual* (2000) in which a basic minimum of transcription and coding conventions for bilingual speech data are outlined. The LIDES guidelines were developed on the basis of CHAT (Codes for the Human Analysis of Transcripts), the transcription and coding format of the CHILDES system (McWhinney 2000), adapted for the use on language interaction data. Likewise, there is a need for providing LIDES dedicated computational tools that automate and support data analysis. Using the CHILDES project (MacWhinney 2000) as its starting point, LIDES concentrates on utilising and developing the CLAN (Computerized Language Analysis) programmes that are suited to the study of language interaction data (e.g. the marking of such phenomena as calques, borrowings, code-switches, language mixing sequences, discourse patterns).

The CHILDES enterprise (MacWhinney 2000, MacWhinney & Snow 1990) shows us the enormous advantage of extensive databases in research fields where data on spoken, spontaneous language is essential. Clearly, the acronym of LIDES is based on CHILDES. The term language interaction, rather than the more commonly used terms "code-switching/code-mixing" and "language contact", was adopted in order to include all manifestations of language contact whether or not the varieties under study are held to belong to two discrete systems.

The LIPPS group's long term aims are to set up a computerised database of bilingual mixed-language data which will be available to all researchers, and to develop software to enable the maximum use of the database. The main aims of the Language Interaction Data Exchange System (LIDES) are to

- maximise the use of available data
- help ensure that data gathered using public funds is made available to the (scientific) community
- allow data sets to be compared
- answer questions that cannot be answered on the basis of one data set
- improve the quality of research and of the data in this field through mutual scrutiny
- promote advances in language interaction research and research methodology, analogous to the advance in first language acquisition research resulting from the CHILDES project (see Sokolov & Snow 1994)

The German/English files listed in Chapter 2.4 and two files from Gardner-Chloros's French/Alsatian database constitute the first substantial publicly available contributions to the LIDES database. These data can be obtained freely from the following web-sites:

<<http://www.ling.lancs.ac.uk/staff/mark/lipps/lipps/>> and

< <http://childes.psy.cmu.edu/lides/>

The latter site also makes the original audio recordings of the Eppler data available to the listener. The transcripts of lbron.cha, Jen1-3.cha, lariel.cha, lfen.cha and lhog.cha are linked to digitised audio files of the original recordings. In Continuous Playback Mode each utterance of the above mentioned transcription files can be played through in sequence, i.e. the transcript can be heard in the original recording as you read it.

3.3. LIDES and CHILDES

Once the LIPPS group had decided to formulate standards for transcribing and coding language interaction data, with the purpose of setting up an international database (LIDES), we looked for existing systems that could be modified to do what we needed. For the reasons already mentioned, the CHILDES system (MacWhinney 2000) was identified as the strongest contender. CHILDES had furthermore been successfully used for over 10 years, and is equipped with an institutional support base, specific detailed guidelines for transcribing and coding data (the CHILDES coding manual) within an existing transcription and coding format (CHAT) and a set of software, the CLAN programs, which researchers can use to carry out a large range of automated analyses of the data in the database.

There were also arguments against using the existing CHILDES system for our purposes. CHILDES was not designed for predominantly adult, multilingual, speech data, but for monolingual adult-child interactions. Therefore the CHAT format may not be considered to be the most appropriate one for the type of data researchers in the area of bilingualism were dealing with. The CLAN programmes were also not designed to answer the type of questions which researchers investigating language interaction would want to ask. However, the CHAT coding scheme and the CLAN tools in CHILDES are open to further elaboration and additions. Existing tools can be accommodated to language interaction purposes and new coding schemes and tools can be developed. In fact, some adaptations necessary to cope with multilingual data can already be found in CHILDES (MacWhinney 2000, Chapter 31)³.

Opting for CHILDES does not mean that we believe that this system gives the answer to all future questions on spoken language databases. On the contrary, it is for the moment the most useful system, but it ought to be optimised in the near future. With this in mind, another point in favour of the CHILDES system is the formal way in which the system is set up. One development we can look forward to in the near future is an interface between CHAT and SGML⁴ formats. Because of its formal properties, there should be no insurmountable problems involved in transforming CHAT-based data to SGML. This prospect in fact matches the view of MacWhinney (1995: 437): 'As our work in database development proceeds, we want to think in terms of a more general database of all the

varieties of spoken human language’.

A recent far-reaching expansion of the CHILDES system is the linking of original sound (and video) recordings to the transcribed records. Access to the original audio-recordings not only enables researchers to verify the significance of the written transcripts, but opens new avenues for spoken language analysis. I will discuss one particular use of the audio-link in Chapter 7.1 on *because* and *well* clauses in my corpus.

3.4. Transcribing and coding my data in the LIDES/CHAT format

I chose the LIDES BASIC format (The LIDES Coding Manual 2000: Chapter 3) for re-transcribing the audio-recordings selected for inclusion in the corpus this project is based on in order to

- increase the reliability of transcriptions by using a co-ordinated system of standards for transcribing and coding spoken multilingual data
- utilise existing computational tools that automate the process of data analysis,
- link the original sound recordings to the transcribed records, and
- facilitate the sharing of audio- and transcript data.

For a listing of the files transcribed in this format see the survey of data in Chapter 2.4.

As mentioned in the previous section, the LIDES transcription and coding recommendations are based on an existing system for child language data, CHAT (Codes for the Human Analysis of Transcripts). A detailed description of the CHILDES transcription system CHAT can be found in the first section of *The CHILDES System* (MacWhinney 2000) or at <<http://childes.psy.cmu.edu/>>. A summary of the CHAT transcription symbols is presented in the appendix of this thesis. The basic format of CHAT and LIDES files is very similar: CHAT transcription conventions are also used in LIDES files, supplemented by conventions introduced for handling bilingual speech data, and similar sociolinguistic background information is present in both the CHAT and LIDES systems. This information is presented in form of “headers”. To introduce the system, I am going to present an edited example illustrating (obligatory, constant and some changeable) headers from Jen1.cha.

@Begin

@Participants:DOR Dorit Adult, LIL Lilly Sibling, TRU Trude Sibling,
MEL Melly Adult, EVA Investigator, XXX Unidentified

@Dependent: cod, glo

@Age of DOR: 74;

@Coder: Eva Eppler

@Education of DOR: gymnasium

@Filename: jen1.cha

@Language: English@2, German@4

@Language of LIL, MEL, DOR, TRU, EVA: English, German

@Age of Onset of DOR: 20;

@SES of LIL, MEL, DOR, TRU: LMC

@Sex of LIL, MEL, DOR, TRU: female

@Date: 18-JAN-1993

@Situation: playing a game of cards

@Comment: LIL is telling the story of her car accident

Headers are indicated by @ followed by the name of the header. The start of every LIDES/CHAT file has to be indicated by the @Begin header. All speakers within a file are listed under the participants header (@Participants) which includes a three letter speaker ID, the names of the speakers and their "role" or relationship in the conversation. In order to preserve the anonymity of my informants, speakers' names were replaced with pseudonyms in all files. The only real name used is that of the researcher, identifiable in all files by the speaker ID EVA. Constant headers include useful information that is consistent throughout the file. Constant headers indicate such basic information as the speaker's age (@Age of XXX:), sex (@Sex of XXX), education (Education of XXX), socioeconomic status (SES of XXX), languages (@Language of XXX) and the age of onset of L2 (@Age of onset of XXX).

Other headers provide information about the date (@Date) and location (@Location) of the interaction/recording, the filename (@Filename) and the people who transcribed and coded the file (@Coder). Another set of headers called "Changeable headers" contains information that can vary within the file, for example, the component activities in the situation (@Activities), relevant background material (@Background), and comments (@Comment). As changeable headers relate to sections of the transcripts only, they can be placed either at the beginning of the file or in the file body. Every CHAT/LIDES file has

to finish with an @End header for the program to identify the end of files.

For the actual transcription of my informants' utterances, the following steps had to be taken to arrive at a basic LIDES transcription of the selected audio-recordings. On the main speaker tier, that is the line that represents what the participants actually said, previous transcripts, when available, were incorporated into the LIDES transcripts. Then passages hitherto not transcribed were added to give a full transcript of the speech as in the recordings. Each utterance is put on a separate line (the "main tier") following an indication of who is speaking, as in line 27 from Jen1.cha

*LIL: he took the number and his name and since +/.

As the CHILDES system was not primarily designed for adult, multilingual, speech data, the CHAT coding scheme had to be extended to cope with multilingual data and new coding practises had to be developed. LIDES BASIC differs from the CHILDES transcription system CHAT in that it includes extensions to cover the use of more than one language in the data. The most obvious and important adaptation of the CHAT system to multilingual speech data is that in LIDES language tags (@1, @2 etc.) are used on the main speaker line to indicate the language of each word.

The next step in producing a LIDES BASIC transcription of my data was to add language tags to every word to indicate its linguistic affiliation. Language tags are of course a form of coding, i.e. coding for language. In my corpus, the tags (special form markers in CHILDES terminology) @2 and @4⁵ identify words as English or German respectively. These language tags were assigned according to the phonology of lexical items in the audio-recordings. The tag @u was added to words that could not unequivocally be assigned to one of the languages used by my informants. Lines 30 - 33 from Jen1.cha illustrate the use of language tags.

*DOR: ich@4 [<] hab(e)@4 geglaubt@4 the@2 lorry@2 is@u [>] xxx .

*LIL: no@2 [<] # the@2 lorry@2 did-'nt@2 do@2 +/.

*DOR: der@4 wind@4 hat@4 (e)s@4 aufgeblasen@4 und@4 the@2 lorry@2 hat@4+/.

All words that are either clearly English or German are assigned @2 and @4

respectively. The copula *is* in line 30 from Jen1.cha, on the other hand, was assigned @u because elision frequently affects the final consonant of the German auxiliary *ist* and this phonological process can render it a homophonous dimorph of the English auxiliary *is*. Many of the words that were difficult to assign to either the English or the German lexicon fall into the following two mayor categories:

- a) words that are phonologically very similar or even identical in both languages, like the preposition *in*; and words that are phonologically very similar in a prestige accent in one language and a regional accent of the another language, like the indefinite article *a* and *ein*. *Ein* is pronounced /•/ in stressed positions in the Viennese accent. In unstressed positions, however, it gets reduced to schwa, like the English indefinite article.
- b) common nouns or names which are either used in both languages or are anglicized versions of German names like *Dorit* for *Doris*,

Features characteristic of natural spoken language are represented using the appropriate CHAT symbols in LIDES transcriptions. The full set of CHAT symbols can be found in the appendix. Here I would just like to comment on those symbols used in the three lines from Jen1.cha quoted above. The CHAT symbols [<] and [>], for example, indicate the beginning and end of overlaps; # marks an un-timed short pause in line 31 Jen1.cha. Pauses between words are not timed in my transcripts (this is not necessary for the grammatical aspects of code-mixing under investigation) but clues to the length of pauses are given by the number of hash symbols used to represent the pause, e.g. # for a short pause and ### for a long pause. Unintelligible speech corresponding to a word is indicated as xxx; and [+/.] symbolises an interruption of one speaker by another speaker.

Morpheme symbols are only used on the main speaker tier when borrowings are morphologically integrated, e.g. *ge@4-bother@2#ed/t@u* (lbron.cha line 1012). In this example the German participle prefixes an English verb stem; the prefix and stem are separated by the CHAT symbol - . The language of the suffix, separated from the stem by the CHAT symbol #, is difficult to determine in this and other examples because Auslautverhärtung frequently also affects the English suffix *-ed* in the speech of my informants. The suffix is therefore marked as @u for undecided.

Supra-segmential features of speech are marked in my transcripts where they are either prominent, or relevant for one of the research areas chosen for this project. An example of the relevance of prosodic contour for the linguistic analysis of a construction type

under investigation in this project is falling intonation at the end of a clause preceding a non-restrictive *because* clause; falling intonational contour is marked by the CHAT symbol -. as in lbron.cha lines 118-19.

*DOR: +, hardly@2 any@2 Englaender@2 -. because@2 mein@4 mann@4 war@4
auch@4 ein@4 Wiener@4 .

In addition to the main speaker tier, additional dependent tiers are recommended for LIDES BASIC to show glosses and free translations. These gloss (%glo) and translations (%tra) tiers are not consistently available in my transcripts but are added to line 33 from Jen1.cha to illustrate the point.

*DOR: der@4 wind@4 hat@4 (e)s@4 aufgeblasen@4 und@4 the@2 lorry@2 hat@4
%glo: the wind has it open blown and has
%tra: the wind blew it open and the lorry

In more extended versions of LIDES, additional language tags, word internal tags and language interaction codes can be added on the main speaker tier. The main tier can furthermore be supplemented with more dependent tiers dedicated to the analysis of language contact phenomena or other linguistic features of interest to the researcher. An earlier version of my files, for example, contained the special purpose coding tier %cod with information on verb type and position in main and subordinate clauses. Further details on LIDES transcription and coding conventions can be obtained from *The LIDES coding manual* (The LIPPS Group 2000) and the LIPPS/LIDES web-site <<http://www.ling.lancs.ac.uk/staff/mark/lipps/lipps/>>. For specific examples of coding schemes developed by members of the LIPPS groups see Chapter 5 in the LIDES coding manual.

Following the steps outlined in this section I arrived at a basic LIDES transcription of the corpus selected for this project. Before I could progress to the analysis, the syntax of the files had to be checked so that the automated analysis tools CLAN could be used on the data. The software designed to check the accuracy of the syntax of CHAT/LIDES files is appropriately called CHECK. As CHECK is already one of the CLAN programmes, I will

discuss it in the next section.

3.5. Automatic analysis of CHAT/LIDES transcribed data (CLAN)

The CHILDES/LIDES systems (MacWhinney 2000, The LIPPS Group 2000) not only consist of guidelines for transcribing and coding data within an existing format (CHAT/LIDES), but also of a set of software which can be used to carry out a range of automated analyses of the data in the database. The automatic analysis programmes are called CLAN (Computerized Language Analysis). There are 37 analysis commands in CLAN at present. I will only discuss those that are useful for bilingual speech data and were also used for the present project.

3.5.1. CHECK

Before the CLAN programmes can be run on new data, the syntactic accuracy of the files has to be checked. This can be done with the CHECK command. This programme checks the overall and detailed structure of newly transcribed CHAT files.

In order to be able to verify the accuracy of CHAT in files, CHECK relies on a file called "depfile" (depfile.cut) which it uses to compare the syntax of the files with that of the programme. The depfile lists the legitimate headers and dependent tiers as well as many of the strings allowed within the main line. Since LIDES is a modified version of CHAT, adjusted for the use on multilingual data, the depfile distributed with the CLAN programmes also had to be modified. The LIDES depfile is available on the LIPPS/LIDES web-site <<http://www.ling.lancs.ac.uk/staff/mark/lipps/lipps/>>.

All other changes I introduced to the syntax of the LIDES files in my corpus are declared in the 00depad.file. This file is specific to my data. CHECK automatically picks up the additional codes in this file and uses them to amplify the standard depfile. The Emigranto 00depad.file has been submitted with the transcription and audio files and is also available on the LIDES and CHILDES web-sites.

CHECK makes two passes through each CHAT/LIDES file. On the first pass it checks the overall structure of the file. On the second pass it verifies the detailed structure of the file against the dep and depad files. The CHECK programme then creates an error file in

which it highlights the location and nature of the errors. Some syntax errors can be fixed automatically, the majority of them, however, need manual attention. Once all the errors in a file have been fixed, the CHECK programme moves through both passes and generates a success message. Other CLAN programmes can then be used on that file.

3.5.2. FREQ

FREQ computes the frequencies of the words in a file or files. The program is useful for mono- and bilingual data in that it enables the researcher to determine without difficulty the total number of word tokens in the corpus. FREQ produces a list of all the word-forms used in user-specified files, along with their frequency counts, and calculates a type-token ratio. The command “freq” generates this information.

For linguists working on bi- and multilingual speech, the distribution of languages in the overall corpus, in sections of the corpus and among individual speakers is an important starting point for their analysis. In addition to the total number of word tokens, the FREQ command line can also list how many different language tags have been used in the transcripts⁶. As mentioned in Section 3.4, this particular study uses @2 as a language tag for English words, @4 for German words, and @u for forms which could not be assigned to either of the languages used in the data on an unequivocal basis. The command “freq +s@_” lists all the separate matches found, “freq +s@2” lists all English words and “freq +s@4” all German words. By adding % to the command string, as in “freq +s%@_”, the FREQ program suppresses the listing of the separate matches and only gives the total frequency of words for each language tag. If this search command is carried out on all files from a particular corpus, it gives the overall distribution of languages in the corpus. It can equally be used on groups of files or individual transcriptions. The frequency counts conducted with the above command line can furthermore be made speaker-specific by adding the speaker code to it. If files contain coding on dependent tiers, the FREQ command can also be used on tags contained on these tiers. To establish the distribution of words from each language as produced by speaker DOR in the group recording made with speakers MEL, LIL and TRU on the 13th Jan 1993 (Jen1.cha), the following FREQ command would be used:

```
freq +s%@_ +t*DOR Jen1.cha
```

The frequency counts carried out by the FREQ automated analysis provide the basic

quantitative background for the study.

3.5.2. COMBO

COMBO was found to be one of the most useful CLAN programs for bilingual data. It is designed to carry out string searches that match patterns of letters, words, or groups of words and symbols in the data files. Because of this quality, COMBO strings can find code-switches within utterances by looking for subsequent words within utterances which have different language tags. In CLAN terms a code-switch may thus be defined as two adjacent words which have different language tags.

The command line, however, needs to be carefully chosen in order to achieve the appropriate search results. In order to achieve this, the researcher using this CLAN program on LIDES data needs to compose a search string by combining special form markers with meta-characters and Boolean notation. For the reader to be able to understand the command lines quoted in this section, I need to briefly explain the main symbols used in COMBO search strings. Because the “+s” switch provides the possibility of defining strings to be matched, it is obligatory in COMBO command lines.

The Boolean characters used in COMBO searches are

^	meaning	immediately followed by
+	meaning	inclusive OR, and
!	meaning	logical NOT

The three meta-characters used in COMBO command lines are

the wild-card symbol *	represents any string of (repeated) characters;
the underscore or _	stands for any single character, and
the backslash \	is used for quoting, i.e. in searches for meta-characters like language tags.

I would like to illustrate the fine-tuning COMBO searches require to produce the intended search results by discussing two search strings which both search for code-switches from English to German. The first command finds English words immediately followed by German words.

```
combo +s*\@2^\@4
```

In the second command we allow one undefined character to intervene between an English word and a German word.

combo +s*\@2^*\@4

I expected the search results for these two commands to be quite different. The difference, however, is less striking than expected. The reason being that the “immediately followed” symbol ^ allows certain CHAT transcription symbols to intervene in the string but not others⁷. The first command line (combo +s*\@2^*\@4), for example, finds only one code-switch in the following utterance from Jen3.cha line 449.

*DOR: because@2 (1)das@4 war@4 (1)Christmas@2 Eve@2 ## , wie@4 sie@4 zurueckkommen@4 +...

whereas combo +s*\@2^*\@4 also finds the second switch after the long-ish pause in the same utterance, i.e Jen3.cha, line 449.

*DOR: (1)because@2 (1)das@4 war@4 (2)Christmas@2 Eve@2 ## , wie@4 (2) sie@4 zurueckkommen@4 +...

In order to find switches in either direction, “combo +s*\@2^*\@4” has to be combined with the reverse search string , i.e. “combo +s*\@4^*\@2”, by using the inclusive OR symbol “+” to yield “combo +s*\@2^*\@4+ combo +s*\@4^*\@2”.

For the chapter on code-mixing in co- and subordination structures, COMBO string searches were furthermore used to elicit conjunctions/complementizers in monolingual and mixed environments from the corpus. Command lines like “combo +w2 -w2 +sbecause\@2^*\@4 +u” were run to find *because*-introduced clauses which contain German lexical items. For this particular research area the CLAN “+w2” and “-w2” options proved invaluable. This option includes a user-specified number of utterances preceding and/or following the main command line in the output. The combo command quoted, for example included two utterances before the line specified in the string and two utterances after the matched sentence. The “+/-w” switches thus provide more context for utterances containing structures under investigation. The “+u” switch also used in the command line quoted merges specified files together. That is, the analysis is not performed on individual files but the program combines the data found in all the specified files into one set and outputs the result for that set as a whole.

For the calculation of switch frequencies in the corpus it was necessary to establish the

number of utterance-final English and German words, as no intra-sentential switches can take place there. For this purpose COMBO searches of the type “combo +s_^\@2^\(!+?+.)” were used. The difference between this command and other COMBO commands already discussed is that here an underscore precedes the asterisk (*) which tells COMBO to search for any single English word immediately followed by an utterance terminator. The above command was found to under-generate in that the number of utterance-final words did not match the number of utterances known to be in the corpus. It therefore had to be supplemented with the “+p” option, which allows the user to redefine the default punctuation set (i.e. the full stop, question mark and the exclamation mark as in the quoted example). Once the other tone unit terminators specified in CHAT were added, the number of utterance final words started matching the number of utterances. Using another switch or option, i.e. “+d3”, the COMBO search string tracking final words of utterances can be piped to **FREQ**, thus providing a shortcut to the answer I sought, i.e. what is the number of utterance-final English and German words in my data.

For the calculation of switch frequencies we also need to know the total number of utterances in the corpus. This information can also be obtained automatically with the help of a CLAN program, which I will discuss in the next section.

3.5.5. MLU and MLT

MLU stands for Mean Length of Utterance. This notion is of course more important for language acquisition data than for bilingual ones. MLU, however, is also useful for this kind of research. This is because MLU not only computes the ratio of morphemes to utterances, but also the total number of utterances in files. This is achieved by typing “mlu” into the command window or selecting it from the program menu. MLU automatically calculates the number of morphemes per utterance and the number of utterances for individual speakers. MLU excludes unintelligible speech (xxx and yyy) from the utterance and morpheme counts, which means that if an utterance consists of only excludable material, the whole utterance is ignored. For this reason I used MLU only for the computation of the number of intelligible utterances in the corpus.

For the total number of utterances I used the MLT search, which includes all unintelligible utterances. MLT is the CLAN programme that was designed to compute the mean number of words, as opposed to morphemes, per utterance. My main purpose for using

MLT was to automatically find the total number of utterances in the corpus, including unintelligible speech. It was, however, also interesting to see whether monolingual and mixed utterances⁸ differ in length, i.e. the ratio of words in monolingual and mixed utterances is also based on an MLT search.

Before I move on to an evaluation of CHILDES and LIDES, I would like to introduce a CLAN program that can be used in order to address one of the main criticisms of LIDES: that the files are overloaded and thus difficult to read.

3.5.6. FLO

The FLO program creates a simplified version of a main CHAT/LIDES line. This simplified version strips out markers of retracing, overlaps, errors, and all forms of main line coding including language tags. FLO can also be used to exclude dependent tiers and, in combination with various different options/switches, specific tiers can be selected to use as input for further analysis using other programs (see Chapter 6.4. of the LIDES Coding Manual).

3.6. Evaluation of LIPPS, LIDES and CHILDES

The researchers forming the LIPPS group recognised an important gap in standardised tools for research into bilingual speech and made it their aim to remedy this, i.e. they worked at setting up a unified and standardised transcription and coding system for bi- and multilingual data. This aim was achieved with the publication of the *LIDES Coding Manual* (The LIPPS Group 2000). In the meantime several members of the LIPPS group have transcribed their own corpora in versions of the proposed system and LIDES BASIC has been introduced to the international research community at various conferences (International Symposia of Bilingualism 1997, 1999, 2001, 2003, TALC 1998, 2000) and in several publications (Gardner-Chloros, Hout, Moyer, & Sebba 1999, The LIPPS Group 2000).

Having a common set of transcription and coding guidelines available is clearly beneficial to the linguistic community interested in bi- and multilingual speech in that there now exists a standard for transcribing and coding as a resource for researchers. Much of the available data is still transcribed and coded in widely disparate forms, however, several

data sets from various language pairs are now available in the LIDES format (see <http://www.ling.lancs.ac.uk/staff/mark/LIPPS/samples.htm>). Admittedly, it takes time to become familiar with the CHAT/LIDES conventions and some extra work is inevitable for creating LIDES files, for example tagging each word with a language code. However, once all this work has been done, the benefits are substantial. I will illustrate some of them in Chapters 6 and 7 on the quantitative and qualitative analysis of my data.

However, I see developing and establishing unified standards for transcribing and coding spoken multilingual data only as a necessary pre-requisite for the bigger aim of the LIPPS group (2000), i.e. to develop LIDES, a computerised corpus of multilingual data. I will therefore go into a bit more detail about the perceived advantages of LIDES.

The LIDES system is open to everybody who is interested in language interaction phenomena. This means that there are different ways to participate in this project. Some users will just want to consult the LIDES database because they lack the data they need to carry out research. Others will contribute their own data sets to the database. All contributors are encouraged to make their audio and video recorded material available. Access to this material enables other investigators to use a given corpus to pursue research on an aspect which may be different from the original research questions for which the data was initially collected. In this way, a corpus which was collected to carry out some sort of quantitative analysis can later be used by researchers working on qualitative analysis. In addition, access to audio or/and video material will allow other researchers to confirm transcription and coding as well as carry out phonetic, phonological and multimedia analysis. All users of the data-base are requested to comply with standard research ethics to guarantee the anonymity of informants.

Some researchers fear that by adding their data to a public database they will lose control over what happens with their data. This is a risk a researcher takes every time he/she publishes or otherwise makes his/her findings public. The risk is somewhat larger when one adds one's data to a database. But as with any publication, there is a moral obligation for users to acknowledge the source of the data they use in their study. The LIPPS group has committed itself to ensure that careful consideration will be given to the public use of data contributed to the database and to the requirement for anonymity of speakers.

It should also be pointed out that future editions of the LIDES manual will incorporate new proposals. LIDES users are encouraged to support the development and improvement of the system not just through contributing their data, but also through making their own proposals for coding study-specific information and for programming. The LIDES enterprise does not imply a deterministic view as to the best way of transcribing, coding and/or analysing bilingual data. The complex nature of the data demands a flexible and open-minded approach to the theoretical decisions involved.

In summary the general reasons for creating a language interaction database are to:

- promote advances in language interaction research and research methodology, analogous to the advance in first language acquisition research resulting from the CHILDES project (see Sokolov & Snow 1994);
- maximise the use of available data;
- allow data sets to be compared;
- answer questions that cannot be answered on the basis of one data set;
- improve the quality of research and of the data in this field through mutual scrutiny;
- help ensure that data gathered using public funds is made available to the (scientific) community.

On a more personal level, the following reasons led me to participate in the LIDES project and contribute my transcripts and audio files to the database: as I would like to compare my data to the data of other researchers, it is more than reasonable that I, in turn, add my data to the database. Secondly, when someone uses my data set looking at it from a different angle, this may give me new ideas for analysis. Also there is the possibility for other researchers of adding tiers of coding to the data set. Any researcher could then make use of this new coding tier. Once this tier has been added to the original data set, it becomes available to other researchers as a further resource.

In the previous paragraphs I outlined general and personal reasons for data-sharing. What makes research in this field exciting for me personally, however, is the question whether there are structural patterns in bilingual speech. A related question is to what extent particular language combinations and/or the contexts and circumstances of bi- and multilingual communities dictate these patterns. The most interesting question in my

mind is to what extent structural patterns in bilingual speech are universal or at least common to similar language sets or similar combinations of sociolinguistic circumstances. To address these issues we need sizeable data sets from a wide variety of language combinations, transcribed and coded in a standardised format and with a defined minimum of sociolinguistics information available. That is, we need something like LIDES.

My work is embedded in the strand of research on code-mixing which focuses on grammatical constraints on where a switch can occur within the sentence. Time after time, constraints proposed on the basis of one data-set, and often put forward as potentially universal, have been disproved when new data-sets have emerged (for a recent survey, see Muysken 2000). Answers relating to the universality of constraints on code-mixing and/or the probability of structural patterns in bilingual speech can only be found on the basis of shared comparable data, i.e. a Language Interaction Data Exchange System.

Furthermore it is not possible, without making comparisons of the kind proposed by the LIPPS group, to establish the relative role of linguistic features as such and sociolinguistic, psycholinguistic and/or contextual factors in the language interaction patterns which are observed. Both of these are fundamental problems with approaches based on a single data-set.

I hope that the result of the LIDES enterprise will not be just more data on more language combinations transcribed and coded in a uniform manner. To answer some of the questions raised in this thesis on a wider scale, research methodology will have to change. The regular occurrence or absolute non-occurrence of specific phenomena, for example, will not only become valuable arguments in code-mixing research (see Sokolov & Snow 1994 for the relationship between CHILDES and research methodology in first language acquisition). It will hopefully also show whether research on bilingual speech can contribute to our insight in linguistic structure in general. To date it is still unclear whether findings originating in code-mixing research can contribute insights to theoretical linguistics. For language acquisition research the question can be answered in the affirmative. Research into bilingualism has so far only had limited impact, for example, the assignment of grammatical gender to words from languages without this grammatical property, or in some areas of psycholinguistics. It is possible that disparately collected, transcribed and coded data and the absence of a substantial

database of bilingual data have so far prevented us from finding such answers.

It is because I am interested in the above issues that I joined the LIPPS group and co-authored the LIDES coding manual (2000). One aim of my thesis is to show some methodological advances that can be made in code-mixing research through the use of a fully and consistently transcribed corpus. It remains to be seen whether the LIDES enterprise can have as profound an impact on methodology on research on bilingualism as the CHILDES project had on language acquisition research.

The only disadvantage of using the LIDES system I can think of is that several processes required before the analysis of data can begin are very time-consuming. These processes are: having to familiarise oneself with the CHAT/LIDES transcription conventions, transcribing the data in this rather complex format (on average, one hour of audio-recordings took twenty hours to transcribe); once this was accomplished, the syntax of the files had to be checked. This took approximately another two working days per file. Linking every utterance in the transcription files to the relevant section of natural speech in the audio files also takes time. Finally, learning to use the computerised analysis tools (CLAN) and finding out how to formalise a command so that the automated analysis produces the desired output naturally also takes time.

For me, the advantages of LIDES discussed in this chapter and the ones illustrated in Chapters 6 and 7, however, outweigh this one disadvantage. In the next chapter I will discuss the main findings of code-mixing research – before the existence of LIDES.

¹ The sections on LIPPS and LIDES in this chapter are based on the LIDES coding manual (The LIPPS group 2000) and other publications and documents produced by the group which I co-authored.

² Louis Boumans (1998: 121), for example, found it 'hardly feasible to examine the hypothesis [that foreign conjunctions do not trigger verb-final in Dutch and German clauses simply because they are used in functions that require main clause order] in relation to the published examples because these are for the most part presented out of context'. I will show in Chapter 7.2 that a fully transcribed corpus of German and English data allows us to verify this hypothesis.

³ Firstly, the CHILDES database contains data from many different languages and the way transcription problems have been solved for these different languages are of help when transcribing language interaction data. Secondly, data on bilingual acquisition are already available in CHILDES, and there is a separate subsection on code-switching in the CHILDES manual (MacWhinney 1995: subsection 9.4) in which some useful coding options are proposed.

⁴ SGML (Standard Generalized Markup Language) is a meta-language, a standard way of marking up texts (both spoken and written), which is independent of any word processor or computer system.

⁵ The numbers 2 and 4 are chosen on an arbitrary basis.

⁶ This is also useful to eliminate mistakes. Language tags that are not used in the study and are therefore not defined in the depad and dep files will be highlighted and can then be corrected.

⁷ The CHAT transcription symbols for syntactic juncture (.), tag question (,,) which in my transcripts is also used to indicate discourse markers, and repetitions with and without retracing ([//] and [/]) may intervene, and the CLAN program still finds code-switch as matching the first search pattern. If, however, pauses (#) of varying lengths, unintelligible speech (xxx), special utterance terminators or words that cannot clearly be assigned to either language intervene, the first command fails to find the switch.

⁸ Monolingual utterances only contain language tags of one type, i.e. @2 or @4; mixed utterances contain language tags of both types, i.e. @2 and @4.

4. Syntactic code-switching research: an overview

In this chapter I am going to sketch the development of syntactic code-mixing research. I do not intend to go into too much detail in this literature review as, firstly, I discussed and tested the proposed constraints published by then in Eppler (1993); and, secondly, several excellent and recent overviews are available (cf. Backus 1996, Boumans 1998, and Muysken 2000). It is, however, important to contextualise the present study for readers not familiar with this research paradigm to get an understanding of how syntactic code-mixing research arrived at the present stage, which, according to Muysken (2000: 12), is characterised by a search for new perspectives.

The first study in this specific line of inquiry that still has an impact on present-day research is Lehtinen (1966). Based on the analysis of her Finnish-English corpus, Lehtinen suggested that syntactic equivalence, surface linear order and closed class items seem to play important roles in intra-sentential code-switching. A year later the first study of transference¹ and triggering² in the language pair under investigation in this thesis was published by Clyne (1967). Syntactic code-mixing research in the 1970s focused on constraints specific to particular language pairs and construction types, which I will not discuss. A period then followed in which universal constraints on code-mixing were proposed. I start my review at this stage and adopt a chronological approach because, although researchers in the area of bilingualism do work with different linguistic theories, their findings fortunately still shape each other's views.

In the classical 1980s studies exploring universal constraints on code-switching, some hypotheses were formulated descriptively within informal frameworks of traditional grammatical notions, others were derived from assumptions underlying modern syntactic theories. Examples of the former are the Free Morpheme and Equivalence Constraints (Poplack 1980, Sankoff & Poplack 1981).

The Free Morpheme and Equivalence Constraints (Sankoff and Poplack 1981)

4.1.1. The Free Morpheme Constraint

The Free Morpheme Constraint prohibits switching within words, or across word-internal boundaries. 'Codes may be switched after any constituent in discourse provided that constituent is not a bound morpheme' (Poplack 1980: 585), i.e. a switch may NOT occur between a bound morpheme (pre- or suffix) and a lexical form unless the latter has been phonologically integrated into the language of the bound morpheme.

This constraint is clearly violated in several cases in my corpus. Examples of gender assignment to English nouns will be discussed in more detail in Chapter 7.2. The following example also illustrates gender assignment (and case marking), but the morphological integration does not surface on the noun or determiner, but on the agreeing English adjective *long*.

(1)

*DOR: und heuer fahren wir nach **Harringate** # **for** a@u **long-es weekend** .

Jen3.cha, line 185.

In example (1), *weekend* gets assigned neuter grammatical gender by the preposition *for* and the German accusative singular suffix in agreement with the gender of the noun is attached to the phonologically unintegrated pre-modifying English adjective *long-es*.

Another example of a switch across word-internal boundaries from my corpus may either involve inflectional or derivational morphology. The suffix *-(e)n* on the English noun *pebble* can either be nominative plural feminine OR, as indicated by the translation DOR offers in the next line, the Viennese dialect diminutive (in this case the switched noun phrase is still nominative plural).

(2)

*DOR: und die **pebbl(e)-n** diese [/ -] wie heisst das noch ?

*DOR: diese steindeln xxx .

Jen2.cha, line 576-77

A clear example of a German derivational morpheme on a phonologically unintegrated English noun stem is the feminine marker *-in* in the next example.

(3)

*LIL: meine **lodger-in** hat +//.

Jen2.cha, line 1555

German pre- and suffixes on English verb stems are quite frequent in my corpus. The first two examples involve only suffixes. The first example (4) illustrates subject-verb agreement, the next two infinitive marking with (5) and without *to* (*zu*) (6).

(4)

*DOR: wir **suffer-n** da alle .

Jen2.cha, line 904

(5)

*TOM: habe ich versucht die armee zu **desert-en** .

lfen.cha, line 217

(6)

*LIL: aber frueher hat man immer ansagen muessen # und **spell-en** .

Jen2.cha, line 705-6

All following examples illustrate participle marking which, in German, involves both a prefix (*ge-*) and a suffix. Since the suffixes can be homophonous in the two languages involved in code-mixing in my corpus, it is difficult to decide in some cases whether the participle markers are German or English. In cases where German Auslautverhärtung affects suffixes, we can assume that the English verb stems are flanked by two German bound morphemes, which is clearly ruled out by the Free Morpheme Constraint.

(7)

*DOR: **no** ja ich hab(e) noch nie **ge#double-t** .

Jen3.cha, line 1287

(8)

*LIL: wann hast du **ge#double-t** ?

Jen3.cha, line 1289

(9)

*DOR: sie haben einfach nicht **ge#bother-ed**.

lbron.cha, lines 1012, 14

(10)

*TOM: naechstes mal , wenn³ ich da war # haben wir ein # wagen [/] ein [/] ein auto **ge#hire-d/t** und haben sie raufgenommen in ein offenes cafe .

lfen.ch, lines 931-34

(11)

*TOM: +, mit (ei)ner saeule # mit die⁴ namen von alle die [/] namen die am xxx+platz in der Gestapo **ge#torture-d** wurden .

lfen.ch, line 1223f

All the examples quoted in this section involve code-switches between bound morphemes (pre- or suffixes) and free morphemes that are phonologically unintegrated into the language of the bound morphemes. Examples 1-11 thus violate the Free Morpheme Constraint. Violations of this constraint also abound in other corpora.

The Free Morpheme Constraint is not discussed much in the literature published after 1985, as Poplack (1988) started regarding most or all intra-word switches as (nonce) borrowings. By classifying phonologically unintegrated free morphemes as borrowings, and thus as a different language contact phenomenon, they do not fall under the Free Morpheme constraint⁵ any longer, as this constraint was formulated for code-switching only. By treating identical linguistic structures, i.e. combinations of free and bound morphemes from different languages, as different language contact phenomena,

Poplack (1988, see footnote 3) “saves” the Free Morpheme Constraint. I will argue against this approach in the remainder of this chapter.

I concur with Treffers-Daller (1994) that it is impossible, both at a theoretical and at a practical level, to differentiate code-mixing and borrowing (see also Eppler 1993). The two should therefore not be considered as two fundamentally different language contact phenomena. If code-switching and borrowing are treated alike, constraints on code-switching should also apply to borrowings. Many researchers, however, still make a distinction between code-switches and (nonce) borrowings and therefore do not regard forms that combine free and bound morphology from two different languages as violations of the Free Morpheme Constraint.

4.1.2. The Equivalence Constraint

Poplack (1980: 586), working in the variationist framework (Labov 1969, Sankoff & Labov 1979), proposes that ‘code-switches will tend to occur at points in discourse where juxtaposition of L1 and L2 elements does not violate a syntactic rule of either language, i.e. at points around which the surface structures of the two languages map onto each other’. That is, the order of sentence constituents⁶ immediately adjacent to and on both sides of the switch point must be grammatical with respect to both languages involved in the production of the switch.

Speech data from my corpus which refute this version of the Equivalence Constraint are given below with German and English word order glosses to illustrate the points around which the surface structures of the two languages do NOT map onto each other.

(12)

*DOR:	sie	haben	uns	rejected	in the beginning
gloG	sie	haben	uns	am Anfang	abgelehnt
gloE	they	have	rejected	us	in the beginning

lbron.cha, line 839

In the above example (12) the position of the object before the main verb in German cause the violation of the Equivalence Constraint from an English word order perspective.

In the next example (13), the subject pronoun would have to be placed immediately after the utterance initial adverbial in English. In German this adverbial causes subject – auxiliary inversion and thus a violation of the Equivalence Constraint.

(13)

*TOM: Zwei Tage spaeter wurde er **executed**.

gloG zwei Tage spaeter wurde er hingerichtet

gloE two days later he was executed

Ifen.cha, line 423

Reacting to criticism about the emphasis on linear sequence in the early versions of the Equivalence Constraint, Sankoff & Mainville (1986: 6) formalised the Equivalence Constraint in context-free phrase-structure terms:

Given a 'set E of immediate descendants of the node directly above the two constituents', then 'the symbols for any nodes in E to the left of the boundary between the two constituents must precede the symbols for all nodes in E to the right of the boundary, in the right side string of the two rules from the two grammars'.

This more formal definition of the word order Equivalence Constraint in terms of the immediate daughters of a given phrase structure node restricts switching between SVO and SOV languages, like English and German. A counterexample from my corpus would be

(14)

TOM: Jemand hat gesagt daß er ist **the father of her child**.

gloG jemand hat gesagt daß er der Vater ihres Kindes ist

gloE: somebody (has) said that he is the father of her child

Ifen.cha, line 122f

Since the rewrite rules for English and German are VP → V NP and VP → NP V respectively, switching would not be allowed under the more formal conception of equivalence. Note that the last example also violates the linear conception of equivalence (Poplack 1980).

There are counterexamples to both versions of the Equivalence Constraint in my corpus, and not only there, but also in most other bilingual corpora (see Mahootian 1993). Violations of this constraint are naturally more frequent in language contact situations in which the two languages involved in code-switching are syntactically very different, as, for example, Berk-Seligson's (1986) Judeo-Spanish and Hebrew data. Note, however,

that Sankoff and Poplack (1981) do NOT claim universality for the Equivalence and the Free Morpheme constraints.

4.2. Subcategorisation and Free Morpheme Constraint (Bentahila and Davies 1983)

There is no need to discuss Bentahila and Davies' (1983: 329) Free Morpheme Constraint as it is identical in content to Poplack's (1980), i.e. 'Code-switching is not possible across word-internal boundaries'. Examples 1 - 11 from my data thus also constitute counter-examples to Bentahila and Davies' Free Morpheme Constraint. As a constraint on code-switching, it may well hold for Bentahila and Davies' (1983) French/Arabic corpus, but not for my German/English one. On the other hand, it is widely acknowledged in the literature that lexical items from one language can be morphologically integrated/inserted into the borrowing language. I have already indicated in Section 4.1.1. that I do NOT think that code-switching and borrowing should be considered as two fundamentally different language contact phenomena, because it is impossible to differentiate between the two with any degree of certainty. Therefore it seems more interesting to look at the morpho-syntactic process involved in bilingual speech production than to establish a classification of contact phenomena. For the same reason it is worth looking at word-internal language changes and constraints proposed for them.

Bentahila and Davies (1983) furthermore propose that switching is constrained by the requirement that there be no violation of the subcategorisation rules of either language. Their Subcategorisation constraint states that 'all items must be used in such a way as to satisfy the (language-particular) subcategorisation restrictions imposed on them' (1983: 329). This constraint is similar to the null hypothesis this thesis is based on, i.e. each word in a dependency must satisfy the constraints imposed on it by its own language. It is difficult to assess the validity of this constraint as it is not clear from Bentahila and Davies' (1983) paper whether their use of the notion of subcategorisation only refers to selection, or whether it includes the position of the complement⁷. If their definition of subcategorisation includes the word-order position of the complement, example (12) in Section 4.1.2 constitutes a counterexample to the Subcategorisation constraint, as the English main verb in this sentence would require its object complement to follow it. If subcategorisation, however, only refers to selection, i.e. whether X needs a complement and what kind of complement, and if the position of complements is handled separately by word order rules, my corpus does not contain any counter-examples to this constraint. The German/English data this thesis is based on support Bentahila and Davies' (1983)

finding that the requirement of equivalence of surface structure between the two languages does not seem to hold⁸. Bentahila and Davies' (1983) Arabic/French data furthermore yields numerous examples of switches at various types of clause boundary, switching before and after complementizers and examples in which the complementizer alone is in a different language from the rest. I will discuss similar examples from my German/English corpus in Chapter 7.2.

Before I move on to the next constraint formulated in the literature, I would like anticipate two issues by quoting "impressionistic" observations of Bentahila and Davies' (1983: 326). First, their French-Arabic bilingual informants tend to resort more to Arabic than to French for grammatical items or function words. Second, Bentahila and Davies hope that this comment of theirs will later be confirmed by a statistical analysis. We will see that function words/closed class items play a prominent role in many later models of code-switching (Joshi 1985, Myers-Scotton 1993), and that the evidence gathered in code-mixing research to date does point towards a probabilistic perspective (see Treffers-Daller 1994). In his discussion of the Subcategorisation Constraint, Muysken (2000: 20) furthermore points out that, for Bentahila and Davies' proposal to work, something like the notion of government needs to be at play. This leads us to the next constraint, which was formulated within the Government and Binding framework (Chomsky 1981).

4.3. Phrase-structure Congruence Constraint (Woolford 1983)

For the discussion of Woolford's model it is useful to remind ourselves of the formal definition of the Equivalence Constraint in terms of the immediate daughters of a given phrase structure node given in Section 4.1.2. Woolford's (1983) paper contains a similar formulation of the Equivalence Constraint in generative terms.

She proposes that the lexicon and word formation processes of the two languages involved in code-mixing remain separate (Woolford 1983: 6). Note that this stipulation rules out word-internal switches and thus amounts to the same effect as the Free Morpheme Constraint. Woolford (ibid.) also proposes that two monolingual grammars co-operate to generate code-mixed sentences. For code-mixing to be possible at all, the grammars of the two languages need to share phrase structure rules. Code-mixed sentences are generated by phrase structure rules that belong to both the grammars simultaneously.

Woolford's (1983: 526) model predicts that there are points along surface strings at which no code-switching can take place, i.e. code-switching is constrained whenever a phrase structure rule unique to one language is used to expand a node. The terminal nodes created by the application of that rule can then only be filled from the lexicon of that language. In other words, when the phrase structure rules of both languages are identical, switching is possible; otherwise it is not. Example (14) in Section 4.1.2. would be prohibited by Woolford's model as the phrase structure rules that specify the word orders of German and English VPs are not identical. These phrase structure rules are also given in Section 4.1.2.

4.4. The Closed-class Items Constraint (Joshi 1985)

Joshi (1985) approaches code-mixing from the mathematical theory of syntactic parsing. His Closed-class Items Constraint states that 'Closed class items (e.g., determiners, quantifiers, prepositions, possessive, Aux, Tense, helping verbs, etc.) cannot be switched' (1985: 194).

This formulation of the constraint is only possible because Joshi, like Woolford (1983) but unlike Sankoff and Poplack (1981), keeps the two grammars involved in the generation of mixed sentences independent⁹ AND treats them asymmetrical. Joshi (1985: 190) claims that, despite extensive intra-sentential switching, speakers and hearers 'usually' agree on which language the mixed sentence is 'coming from'. He calls this language the MATRIX LANGUAGE and the other language the EMBEDDED LANGUAGE. Only because he assumes this asymmetry in the system, can Joshi state that closed class items cannot be switched without stating from which language or grammar to which. A switch, in his model, is always a switch away from the matrix language.

Many researchers (Wentz 1977, Pandit 1986, Nishimura 1985, Myers-Scotton 1993, Klavans 1985, Treffers-Daller 1994) in the field assume an asymmetry between the two languages involved in the production and comprehension of code-mixed sentences. They either try to identify the matrix language on the basis of several criteria (Myers-Scotton 1993), or define the matrix language as the language of the finite verb (Klavans 1983, Treffers-Daller 1994). This decision is frequently approach or theory-driven, and so it is in my work. In Word Grammar (Hudson 1990), the syntactic model used in this study, the "root" of a sentence is the finite verb. The language of the finite verb would thus be the prime candidate for matrix language. However, because in Word Grammar syntactic structures are analysed in terms of dependency relations between single words¹⁰, and constituents¹¹/maximal projections play no explicit part in

the grammar, the notion of a matrix language only makes limited sense in an analysis of mixed utterances within this theory of sentence structure. I will return to this issue in Chapter 4.7. and Chapter 5 on WG.

Before I move on to the Government Constraint and the Matrix Language Frame model, I will test Joshi's constraint on closed-class items against my data. Counterexamples to this constraint abound in my corpus, as in Giesbers' (1989). I will quote just a few of them, illustrating different types of switched closed-class items, a subject pronoun in example (15), a preposition in (16), a quantifier in (17), a numeral in (18) and a finite verb in (19). All 16 *because* in otherwise German contexts discussed in Chapter 7.2. also count as potential counterexamples to the Closed-class Items constraint.

(15)

*LIL: **you** kannst # jauchzen. Jen2.cha, line 1019

(16)

*MEL: **and**¹² **dur:ing** die erste partie , die wir gespielt haben [/]
die ganze partie **I was not able to come out once** . Jen2.cha, line 56

(17)

*LIL: ich bin heute **almost** a [: eine] stunde auf der polizei gewesen #
so viele leut(e) waren . Jen3.cha, lines 654f

(18)

*TRU: **you have got** hundert+fuenfzehn # fuenf+und+dreissig,, nicht?
Jen2.cha, line 887

(19)

*DOR: na ja # ich **enjoy** (e)s # aber ich muss mich so +/.
*TRU: ++ konzentrieren . Jen2.cha, lines 850f

Joshi's constraint on closed-class items thus clearly over-generates, but his focus on this type of words, and his proposal that properties of the matrix language determine whether mixing is possible or not, became quite influential in the development of syntactic code-mixing research.

4.5. Government Constraint (DiSciullo, Muysken and Singh 1986)

In the introduction to this chapter I mentioned that some of the hypotheses on code-switching are formulated in informal frameworks of traditional grammatical notions, while others are derived from assumptions underlying specific modern syntactic theories. We have gradually moved from the former, e.g. the Free Morpheme and Equivalence

Constraints (Poplack 1980 & Sankoff & Poplack 1981), to the latter Woolford (1983). DiSciullo, Muysken and Singh (1986) propose to constrain code-switching by government, the traditional assumption behind X-bar theory. They initially used the Chomsky (1981: 164) formulation of government ‘ α governs γ in $[\beta \dots \gamma \dots \alpha \dots \gamma \dots]$, where $\alpha = X^0$, and α and γ are part of the same maximal projection’. The X-bar assumption that syntactic constituents are endocentric is important for the formulation and working of the government constraint. Heads not only project their syntactic features onto the constituent they govern, but also their language index. The language index is assumed to be something specified in the lexicon (DiSciullo et. al. 1986: 6), since the lexicon is a language-specific collection of elements.

For code-switching purposes the Government Constraint was formalised in DiSciullo et. al. (1986: 6) as $[X^p Y^q]$, where X governs Y, and p and q are language indices. The nodes in a tree must dominate elements drawn from the same language when there is a government relation holding between them.

The Government Constraint predicts that ungoverned elements, such as discourse markers, tags, exclamations, interjections and many adverbs, can easily be switched. This prediction is also supported by my data (see also Eppler 1993) and most other bilingual corpora. However, the Government Constraint also predicts that switches between verbs and their objects and/or clausal complements, and switches between prepositions and their NP complements are ungrammatical. Examples illustrating violations of these predictions from my corpus would be

(20)

*TRU: so [/] so **you have** eine uebersicht .

Jen2.cha, line 133

or a switch for a dislocated¹³/topicalised/extraposed object

(21)

*MEL: **one thirty+nine** haben wir bezahlt .

Jen2.ch, line 2352

(22)

*DOR: **I wonder** , wem sie nachgradt [= takes after] .

Jen2.cha, line 1531

or in the other direction, i.e. from a German verb to an English clausal complement

(23)

*MEL: ich hab(e) gedacht **there is going to be a fight** .

Jen1.cha, line 987

(24)

*TRU: einmal da war einer , der hat ueber **faith+healing** gesprochen .

The original inclusion of functional categories in the class of governors ruled out code-switches which are also documented in my data, e.g. between complementizers and clauses that depend on them, as in (25),

(25) TRU: **to buy yourself in means that** +...

DOR: du kannst dich nochmal einkaufen.

Jen1.cha, lines 977f

and the domain of government was too large. The above formulation of the government constraint includes the whole maximal projection and thus, for example, bans switching between verbs and location adverbs, again contrary to the evidence. Therefore a limited definition of government, involving only the immediate domain of the lexical head, including its complements but not its modifiers/adjuncts, was adopted and the Government Constraint was re-phrased (Muysken 1989) in terms of L-marking: $*[X_p Y_q]$, where X L-marks Y, and p and q are language indices. Even the modified version of the government constraint in terms of L-marking is not empirically borne out, as we see from the following example.

(26)

TRU: das ist **painful**.

Jen3.cha, line 1879

¹⁴%glo: this is

Muysken (2000: 25) identifies two main reasons why the Government Constraint, even in its revised form, is inadequate. The main reason is that categorial equivalence (Muysken 2000) or congruence (Sebba 1998¹⁵, Myers-Scotton & Jake 1995¹⁶) undoes the effect of the government restriction. A second reason is that the Government Constraint does not sufficiently acknowledge the crucial role of functional categories, in contrast with Bentahila and Davies (1983), Joshi (1985) and Myers-Scotton (1993). Both functional categories and categorial equivalence play an important role in later research on code-mixing.

The government constraint was formulated as a universal constraint that was supposed to hold absolutely, which is not surprising, given the generality assumed for the underlying notion. The fact that it 'runs into grave difficulties', as acknowledged by one of its authors (Muysken 2000: 24), threw the research paradigm into a considerable crisis and pretty much ended the "classical" second stage of syntactic code-mixing research. Only one more set of constraints was formulated before the search for new perspectives started.

4.6. Functional Head Constraint and the Word-Grammar Integrity Corollary (Belazi, Rubin and Toribio 1994)

Belazi, Rubin and Toribio's (1994) model constitutes a further elaboration of the government model under the principles and parameters approach. We saw in the previous section that Muysken and collaborators shifted from an early and quite general definition of government to the more limited definition of L-marking in their formulation of the Government Constraint. L-marking restricts government to the relation between a LEXICAL head and its immediate complements. Belazi, Rubin and Toribio (1994) go the other way, i.e. they propose to restrict code-mixing by the feature-checking process of f-selection (Abney 1987). Language, in Belazi, Rubin and Toribio's model, is a feature¹⁷ of FUNCTIONAL heads that needs checking like all other features. The Functional Head Constraint (Belazi, Rubin and Toribio (1994: 228) is formulated as follows

The language feature of the complement F-selected by a functional head, like all other relevant features, must match the corresponding feature of that functional head.

Code switching between a lexical head and its complement proceeds unimpeded in this model.

Because many inflectional morphemes were treated as independent functional heads in the principles and parameters approach, Belazi, Rubin and Toribio (1994) subsume the Free Morpheme Constraint under their functional head constraint: switching is disallowed between an inflectional morpheme and a word-stem.

Like all researchers working on Spanish/English and Arabic/French code-mixing, Belazi, Rubin and Toribio (1994) have to deal with the different placement of adjectives pre- or post-modifying nouns in the language pairs they are working on. Their data indicate that switching is possible when the adjectives and nouns obey the grammars of the languages from which they are drawn. This leads them to supplement the Functional Head Constraint with the Word-Grammar Integrity Corollary, which states that 'a word of language X, with grammar G, must obey grammar G' (Belazi, Rubin and Toribio 1994: 232). Note the similarity of this corollary with Bentahila and Davies's (1983) Subcategorisation Constraint and the null hypothesis this thesis is based on (Eppler 1999).

Like the Government Constraint, the Functional Head Constraint rules out switches between complementizers and their clausal complements. Therefore example (25) in Section 4.5., and possibly the German clauses introduced by *because* in my corpus, provide counter-evidence to this constraint. It also rules out switches between infinitival *to* and its verbal complement, examples of which are also attested in my corpus.

(27)

*LIL: **you don't need to** wegwerfen .

Jen2.cha, line 2555

The Functional Head Constraint furthermore rules out switches between determiners (including quantifiers and numerals) and nouns. As nouns are the most frequently borrowed or switched word class, counterexamples abound in my (e.g. 28 – 30) and many other corpora.

(28)

*DOR: und sie war (ei)ne **nurse** .

lbron.cha, line 658

(29)

*MEL: keine **possibilities you had** ?

Jen2.cha, line 609

(30)

*MEL: fuer vierzig **penny** kann man nicht ins kino gehen .

Jen2.cha, line 2678

The Functional Head Constraint is thus shown to over-generalise. The Word-Grammar Integrity Corollary requires the placement of each word of a language to be consistent with that language's grammar. Because of this requirement, it not only amounts to the same effect as the Equivalence Constraint, as Mahootian and Santorini (1996) correctly point out in their critique of Belazi, Rubin and Toribio (1994), but it also rules out code-switching between SVO and SOV languages.

I have shown that none of the constraints proposed in the literature are able to account for the structures found even in a comparatively small data set, based on only one language pair, like my German/English corpus. Counter-examples to all the constraints discussed in this chapter from a variety of language pairs are collected in Mahootian (1993). As none of the syntactic restrictions on code-switching proposed in the literature hold absolutely and universally, the last mentioned researcher suggested a return to the null hypothesis. Mahootian and Santorini (1996: 470) propose that 'Heads determine the syntactic properties of their complements in code-switching and monolingual contexts alike'. Their analysis provides strong support for the projection of syntactic structure from the lexicon (and the complement/adjunct¹⁸ distinction).

Roughly at the same time (1997) I went down a similar road by adopting a lexically based dependency grammar, i.e. Word Grammar, as the theoretical framework underlying my analysis and by formulating the null hypothesis in Word Grammar terms as:

Each word in a dependency must satisfy the constraints imposed on it by its own language.

The Word Grammar null hypothesis differs from Mahootian and Santorini's (1996) in that it places less explicit emphasis on heads; it is, however, quite similar to Bentahila & Davies' (1983) Subcategorisation Constraint and the Word-Grammar Integrity Corollary (Belazi, Rubin & Toribio 1994). Due to the different syntactic theories employed, however, predictions are made on different levels in the two frameworks. I will return to this issue in Chapter 5 on Word Grammar.

Other researchers searched for new perspectives in different directions: Muysken (2000) seems to have given up on the possibility of finding unifying principles that are valid for bilingual speech production and proposes that several distinct processes are at work. Myers-Scotton (1993 ff.), on the other hand, focused on "system morphemes" (functional categories) and their role in establishing a Matrix Language Frame. I will review Myers-Scotton's (1993) Matrix Language Frame Model first before I move onto Muysken's (2000) typology of code-mixing.

4.7. The Matrix Language Frame Model (Myers-Scotton 1993)

Joshi's (1983) model for characterising intra-sentential code-switching provided two sources of inspiration for the Matrix Language Frame Model (Myers-Scotton 1993 & 1999, Myers-Scotton & Jake 1995). The first one is the assumed asymmetry between the two languages involved in code-switching. The second one is the special status he assigns to closed-class items, i.e. they cannot be switched. These two assumptions furthermore "fit" Myers-Scotton's (1993) Swahili/English data well. That is, in the Swahili-English corpus Myers-Scotton based much of her work on, there is a clearly identifiable base language and this language also provides the vast majority of closed class items in mixed utterances.

The central theoretical construct of this model is the Matrix Language (ML). According to Myers-Scotton's model this language plays the dominant role in structuring code-switched constituents. That is, the Matrix Language is the language that sets the

grammatical frame in the unit of analysis. Other participating languages are called the Embedded Languages (EL). The units of analysis are CPs. Intra-sententially code-switched utterances are defined as CPs that include morphemes from two or more languages. Myers-Scotton identifies three types of constituents that show code-switching within CPs:

1. ML + EL constituents, which consist of morphemes from both languages.
2. ML islands are constituents which only contain ML morphemes and are well-formed according to the ML grammar
3. EL islands are constituents with morphemes solely from the EL and well formed according to the EL

With the exception of EL constituents or “islands”, the ML is the language that projects the morpho-syntactic frame for constituents¹⁹.

The definition of the Matrix Language is based on structural, quantitative²⁰, sociolinguistic and psycholinguistic²¹ criteria. The structural criteria are formulated into two principles, the Morpheme Order Principle and the System Morpheme Principle (Myers-Scotton & Jake 1995: 983).

The Morpheme Order Principle

IN ML+EL constituents consisting of singly occurring EL lexemes and any number of ML morphemes, surface morpheme order (reflecting surface syntactic relations) will be that of the ML.

The System Morpheme Principle

In ML+EL constituents, all system morphemes that have grammatical relations external to their head constituent (i.e. participate in the sentence’s thematic grid) will come from the ML.

These two principles are supported by two hypotheses, the Blocking Hypothesis (Myers-Scotton 1993: 120) and the Embedded Language Island Hypothesis.

Blocking Hypothesis

In ML+EL constituents, a blocking filter blocks any EL content morpheme which is not congruent²² with the ML with respect to three levels²³ of abstraction regarding subcategorisation.

Embedded Language Island Hypothesis

We hypothesize that the major reason EL islands are formed is a congruence problem across the CS language pair in regard to SP [i.e. semantic pragmatic]

feature bundles. ... The other major reason for their formation has to do with incongruence regarding predicate-argument structure (Myers-Scotton & Jake 1995: 995)

Myers-Scotton (1993) furthermore proposes the distinction between content and system morphemes as a second crucial opposition in mixed utterances. Both concepts are used in the principles and hypothesis quoted above and as the distinction between content and system morphemes does NOT capture the same opposition as either open vs. closed class items (cf. Joshi 1983) or content vs. function words, they require defining.

CONTENT MORPHEMES, according to Myers-Scotton & Jake (1995: 984) constitute the predicate-argument structure of utterances by either receiving or assigning thematic roles, i.e. they are specified as [+ θ -role assigner/receiver]. Prototypical thematic role assigners are 'most' verbs and 'some' prepositions; prototypical thematic role receivers are nouns and descriptive adjectives. Discourse markers/particles and 'some' subordinators are also considered to be content morphemes because they determine discourse thematic-roles, such as topic and contrast.

SYSTEM MORPHEMES do not participate in the thematic structure of a sentence, i.e. they are specified as [- θ -role assigner/receiver]. A second feature characteristic of 'most' system morphemes is the feature [+ Quantification]²⁴. A morpheme has a plus setting for quantification within the Matrix Language Frame model, if it restricts possible referents of a lexical category. Myers-Scotton & Jake (1995: 985) give tense and aspect as examples for [+ Q]. Tense and aspect restrict the possible reference of predicates (i.e. verbs and adjectives). Prototypical system morphemes are inflections and most function words.

I am not going to discuss the extended version of the Matrix Language Frame model (Myers-Scotton 1999) because the new assumptions (the composite ML, and the splitting of system morphemes into two distinct types) were developed for language contact phenomena that are not or only marginally present in my data (e.g. convergence, attrition, bilingual acquisition and creole languages). The Matrix Language Model still applies to "classic" code-switching, which is defined as 'bilingual production in which the speakers have sufficient access to the grammars of all varieties involved so that they can produce monolingual utterances in any of these varieties' (Myers-Scotton 1999:14). From the description of my informants' bilingual proficiency in Chapter 2 we know that all my informants have sufficient access to German and English to produce monolingual utterances in both languages.

For many, if not most, utterances in my corpus it is possible to assign a matrix language. In examples 1-11, which are ML+EL or mixed constituents, all system morphemes are from the matrix language German (cf. System Morpheme Principle). The surface morpheme order is that of the matrix language, too, and the only EL lexemes are singly occurring English free morphemes (cf. Morpheme Order Principle). In this context it is also worth highlighting that the reduced inflectional morphological system of English places it at a distinct disadvantage as a contender for matrix language in comparison with German. However, in the overall corpus the extremely frequent inter-sentential switches render the notion of matrix language unhelpful. AND there are particularly interesting bilingual utterances for which the notion of Matrix Language seems too rigid. (31)

*TRU: is(t) doch noch a [: ein] ## [/] mehr **reason** nicht **to come out** !

Jen1.ch. line 2603

In example (31) we have two CPs. The matrix language for the first CP is clearly German, as it only contains one English content morpheme (*reason*) and all the system morphemes are German. The surface morpheme order is also German. The matrix language for the second CPs is presumably English. The surface morpheme order is English, cf.

English: not to come out

German: nicht heraus zu kommen

And if I apply Myers-Scotton's system vs. content morpheme distinction correctly, we have two English system morphemes (*to* and *out*²⁵) and only one German one (*nicht*). Therefore we have to assume a change in matrix language between the two CPs. The same holds true for example (32).

(32)

*LIL: **I think** die mutter war schrecklich # **from what one hears** .

Jen1.cha, line 2023

English is the matrix language of the first and third CP in example (32), but German of the second CP. We see that some of my data make it necessary to assume a going back and forth between different matrix languages²⁶. This is clearly a weak claim for a matrix language and not very economical, and therefore makes me doubt whether the assumption that all mixed sentences have an identifiable matrix language should really hold for all bilingual corpora.

Apart from the economy problem just outlined and the criticism that can and has been launched against the Matrix Language Frame model on several grounds²⁷, it has properties that do not make it particularly useful for my work.

Firstly, and as I pointed out in the introduction to this section, Myers-Scotton's view of the process of code-mixing corresponds quite closely to the prototypical mixing pattern found in her Swahili/English data, that is insertion. Because she predominantly works with and references²⁸ code-mixing between language pairs in which one language dominates, she develops an asymmetrical model. Researchers working on typologically similar language pairs, on the other hand, have a tendency to adopt symmetrical models (see Nishimura 1986). For my German/English corpus in which alternational mixing patterns dominate, asymmetrical models like the Matrix Language Frame model or Joshi's (1983) model are not very suitable.

The second reason why the Matrix Language Frame Model is incompatible with my approach also has to do with its asymmetrical nature. In the word-based dependency grammar I use for the syntactic analysis of my data, a predominantly insertional view of code-mixing processes makes little to no sense. If everything that needs to be said about language structure can be said in terms of dependency relations between single words, drawn from two lexicons, insertion only makes sense for words at the very end of dependency chains, i.e. words that do not have a dependent themselves. This will become clearer once I have explained the basics of Word Grammar (see Chapter 5).

Despite these incompatibilities between my and Myers-Scotton's data and approaches, her recent attempts to explain certain types of code-mixing patterns through 'compromise strategies'²⁹ may prove useful for my work. Myers-Scotton's (1995) compromise strategies, however, are less immediately applicable to my data than Treffers-Daller's (1994: 235) 'techniques'³⁰ to overcome difficult switch points', or Muysken's (2000) 'escape hatches'³¹. Another aspect of Myers-Scotton's work that is in accordance with my (and Treffers-Daller's) approach is that she does not distinguish between code-switching and borrowing. I am, furthermore, very sympathetic towards Myers-Scotton trying to explaining code-mixed utterances from a psycholinguistic/speech production point of view.

4.8. A typology of code-mixing (Muysken 2000)

As mentioned in the introduction, Muysken (2000) characterises the stage code-mixing research is in at the moment as a search for new perspectives. Like the language acquisition paradigm a decade or so earlier, research on language contact phenomena

plunged into a minor crisis in the nineteen-nineties, when all absolute and universal constraints proposed for code-switching were shown to be, at best, probabilistic and possibly even parochial, i.e. applicable only to certain language pairs and/or bilingual communities. It is hoped that Pieter Muysken's (2000) typology of code-mixing AND the LIDES database will have a similar effect on this discipline as Fletcher and MacWhinney (1995) AND the CHILDES system had for the language acquisition paradigm. That is, to provide a reference point AND comparable data to move research forward into a new direction. If this happens, research into language contact phenomena may also be able to contribute insights for general/theoretical linguistics.

Underlying Muysken's typology of code-mixing is the no doubt correct observation that the mixing patterns described in the literature to date vary considerably. This variation is due to language typological factors on the one hand, and to socio- and psycholinguistic factors on the other hand. Muysken presents this graphically in a triangle diagram first shown at the LIPPS/LIDES workshop in Nijmegen in 1996, a simplified version of which is reproduced as Figure 8.2. in *Bilingual Speech* (Muysken 2000: 246). In this diagram, Muysken localises a number of language pairs/contact settings in relation to the predominant mixing patterns found in these data. If asked to place my corpus in this diagram, I would put the way the core group of my informants combine German and English between Poplack's Spanish/English New York corpus and Gardner-Chloros' Alsatian/French data set from Strasbourg. That is, the mixing patterns display characteristics of all three processes distinguished by Muysken, but is closer to alternation and congruent lexicalization than to insertion. For this analysis to make sense for the reader who is not familiar with Muysken's (2000) typology, I will now briefly describe the three main processes of combining two or more languages in one utterance as identified by this author.

4.8.1. Insertion

Two approaches that depart from the notion of insertion have already been discussed in this overview: Joshi's (1983) model and Myers-Scotton's (1993, 1995, 1999) Matrix Language Frame model. In insertion, lexical items or entire constituents from one language are embedded into a structure from the other language. In the insertional pattern, the process of code-mixing is conceived as something akin to borrowing: the insertion of an L2 lexical or phrasal category into a grammatical structure provided by a matrix language. Diagnostic features of insertion are (cf. Muysken 2000: 63):

- insertions are predominantly single constituents;

- they tend to exhibit a nested a b a structure, where the a elements are structurally related;
- the inserted elements tend to be content words, e.g. nouns and adjectives;
- the inserted elements tend to be complements (rather than adjuncts); and
- the inserted elements tend to be morphologically integrated.

Examples 1-11 from my corpus illustrate insertion of an English free morpheme into a German morpho-syntactic structure. In example (33) we find both insertion of a single English word, and insertion of an English X' constituent into a German matrix language frame. More specifically, an English proper noun is inserted into a PP (in WG terminology, an English (place) name is the complement (post-dependent) of a German preposition); and an N' (an English noun with an English pre-adjunct) is inserted into a German determiner phrase (DP).

(33)

*DOR: sie hat noch immer den **northern accent** von **Manchester** +...

Ibron.cha, line 1398

4.8.2. Alternation

In the alternational pattern, bilinguals oscillate between structures from at least two languages, like in Poplack's (1980) Spanish/English data. There is a true switch from one language to the other (either between or at clause boundaries), involving both grammar and lexicon. Therefore alternation requires compatibility or equivalence of the languages involved at the switch point. Properties of alternational code-switching are (Muysken 2000: 96- 103):

- several constituents in sequence are switched;
- the switch points tend to be at a major clause boundaries;
- non-nestedness of A...B...A sequences, i.e. the elements are not structurally related;
- the switched fragments are longer and more complex than insertions;
- discourse particles, adverbs and interjections are prototypical alternations;
- alternational switches tend to be clause-peripheral or dislocated;
- alternational switches are frequently flagged, i.e. accompanied by editing phenomena; and
- alternational switches tend NOT to be selected by another element;

Further properties of alternational code-switching are: embedding in discourse, doubling, and dummy insertion (Muysken 2000: 104f.).

Example (32) in Section 4.7, repeated here for convenience's sake, is a clear example of alternation.

(32)

*LIL: **I think** die mutter war schrecklich # **from what one hears** .

Jen1.cha, line 2023

In the discussion of this example I mentioned that its analysis requires us to assume two changes in matrix language. In Muysken's terminology this means that there are two true switches from one language to the other. Furthermore, several constituents in sequence are switched, the switch points are at a major clause boundaries and utterance peripheral, the English elements are not structurally related, the switched fragments are longer and more complex than in the insertion examples and there is a short pause (editing phenomenon) before the last switch. Example (32) was thus presumably produced using the process of alternation.

4.8.3. Congruent Lexicalization

When material from different lexical inventories is used in grammatical structures that are shared between the languages involved in intra-sentential switching, Muysken (2000) talks about congruent lexicalization. For congruent lexicalization to be a mixing process available to bilinguals, their two languages have to share grammatical structures that can be filled lexically with elements from either language. Therefore congruent lexicalization is predominantly found between two closely related language pairs, like Dutch and English, or German and English (cf. Clyne's 1967 data). Muysken (2000: 7) views congruent lexicalization as a process akin to register shifting and monolingual linguistic variation. The following features are characteristic of congruent lexicalization (Muysken 2000: 128 – 34):

- there is linear and structural equivalence between the two languages involved in mixing;
- congruent lexicalization tends to be multi-constituent code-mixing;
- congruent lexicalization tends to be non-constituent or “ragged” mixing;
- there are no restrictions on categories that can be switched and possibly no structural constraints on mixing either;
- the a b a structure will probably be non-nested;

- congruent lexicalization involves bi-directional code-mixing, i.e. there is no matrix language;
- there are frequent back-and forth switches;
- homophonous diamorphs facilitate congruent lexicalization (Clyne 1967);
- morphological integration is frequent;
- triggering (Clyne 1967) of switches by words from the other language is likely; and
- mixed collocations and idioms are expected to be present.

Example (34) illustrates both, insertion of two English proper nouns/names/cognates into German DPs and congruent lexicalization³². For the construction type used in example (34), the structures of German and English are identical and can be filled lexically with elements from either language. The two English cognates (*Hungarians*, *Czechs*) to the left of the congruent lexicalization may well trigger (Clyne 1967) the switch. Furthermore, the definite article (a@u), realised as schwa in unstressed positions in both the Viennese dialect and Standard English, is a homophonous diamorph (Clyne 1987) and thus creates what Muysken (2000: 6) calls an ‘ambiguous switch point’. Example (34) therefore is a prototypical example for congruent lexicalization.

(34)

*DOR: die **Hungarians**, die **Czechs**, die haben immer a@u **worse accent than we have**.

Ibron.cha, line 1832

The first example quoted in this chapter also illustrates congruent lexicalization. The switch is triggered by an English place name (cognate), the adjective is morphologically integrated and there is linear and structural equivalence between German and English prepositional phrases.

I hope the discussion and analysis of examples (32) – (34) shows that Muysken’s typology of code-mixing is as concrete as we can possibly expect, given the variation we find in code-mixing patterns across different language pairs and in different bi- and multilingual settings. The only problem I have with Muysken’s approach is that he treats insertion, alternation and congruent lexicalization as different phenomena. In this chapter I already argued for NOT treating code-mixing and borrowing as two fundamentally different language contact phenomena. Likewise I would also like to argue for NOT treating bilingual strategies to combine two or more codes in one sentence as different processes. In my analysis I will therefore not distinguish between code-switches and borrowing. Neither will I distinguish between insertions, alternations and congruent lexicalizations, although this is clearly possible, as shown in this section. The reason I

take this approach is because I believe that making these distinctions diminishes the impact code-mixing research can have on general linguistics. If we, like Boeschoten and Huybregts (1997) and MacSwan (1999), assume that the mechanisms for monolingual grammar are necessary and sufficient for bilingual grammar, findings from code-mixing research can contribute to our understanding of all language structure.

4.9. Summary

In this chapter I have reviewed the main syntactic constraints on, and models of intra-sentential code-mixing proposed in the literature. The models described in Sections 4.7 and 4.8 have developed out of the constraints discussed in Sections 4.1 to 4.6. The issues that lie at the core of our present view of intra-sentential code-mixing, however, have been established by Lehtinen (1966), whose study I would like to return to now.

Lehtinen (1966) identifies the pre-requisite for the phenomenon of intra-sentential code-switching to occur at all, and several of the main issues in this research paradigm. She states that 'in order for any intra-sentential code-switching to be possible at all, there must exist in the two languages some constructions which are in some sense similar' (Lehtinen 1966: 153). She proposes that similarities must exist, firstly, between 'certain syntactic items from each language which are equivalent to each other' (ibid.). This notion is variably called categorial equivalence (Muysken 2000) or congruence (Myers-Scotton 1995, Sebba 1998) now. Some progress has been made in identifying what constitutes categorial equivalence, but only in highly specialised areas (e.g. verbs, determiners and conjunctions). Similarities must, secondly, exist in the surface grammar of sentences (ibid.). This idea has been developed into the word order Equivalence Constraint (Sankoff & Poplack 1980), the Phrase-structure Congruence Constraint (Woolford 1983) and underlies the processes of congruent lexicalization and alternational code-switching (Muysken 2000). The third corner-stone of code-mixing research identified by Lehtinen (1966) is the role closed-class items (function words) play in certain mixing patterns. This idea has given rise to the constraint on closed-class items (Joshi 1983), the Government Constraint (DiSciullo, Muysken & Singh 1986) and the Functional Head Constraint (Belazi, Rubin and Toribio 1994), but also underlies the insertional view of code-switching and the Matrix Language Frame Model (Myers-Scotton 1993).

Out of the two predominant views of intra-sentential code-switching (asymmetrical and insertional or symmetrical/alternational), researchers tend to adopt the one that best fits

their data and the linguistic framework they are working with. Linguists working on typologically quite different language pairs within a Chomskyan framework tend to favour the asymmetrical and insertional view. Researchers working on typologically similar language pairs within other linguistic theories tend to adopt a symmetrical/ alternational view. This also holds true for the present thesis.

What is missing is a unified theory of code-switching. I have argued in this chapter that possible ways of coming closer to a unifying theory of code-mixing could be:

- to treat code-switching and borrowing as fundamentally similar phenomena, cf. Treffers-Daller (1994) and Muysken (2000)
- to adopt a probabilistic perspective, cf. Treffers-Daller (1994) and Muysken (2000). Given that all absolute and universal constraints have been refuted, I think we have little choice in this matter.
- to try to identify mechanisms that underlie the production (and comprehension) of ALL intra-sententially mixed utterances rather than dividing them into several distinct processes. Taking a very close look at categorial equivalence and other escape hatches (Muysken 2000: 30) or compromise strategies (Myers-Scotton 1995) or “techniques” to overcome difficult switch points (Treffers-Daller 1994: 235) may be one step in this direction.
- to focus our study on dependency relations between code-switched words (or morphemes). Muysken (2000: 19) states that his work on Quechua/Spanish code-mixing has led him to an approach that stresses dependency rather than equivalence, assuming that code-mixing obeys a general constraint of lexical dependency. I have opted to analyse my data with a dependency grammar, namely Word Grammar, for reasons which I would like to outline in the next chapter.

¹ Clyne (1987: 740) defines transference as a ‘single item is transferred from language B to A (or vice versa), whether integrated into the grammatical and/or phonological system of the recipient language or not’.

² Triggering describes a phenomenon ‘where an item of ambiguous affiliation (that is, one belonging to the speaker’s two systems) triggers off a switch from one language to another’ (Clyne 1978: 744).

³ In the chapter on the language use of my informants (chapter 2), I identified TOM as the informant who uses most Viennese dialect forms. In example (10) the Standard Austrian German temporal adverbial would be *als*. TOM generalises *wenn*, as is customary in the Viennese dialect.

⁴ Note the case of syncretism in example (11); the preposition *mit* assigns dative case in Standard Austrian German.

⁵ ‘Occasionally the Free Morpheme Constraint, which prohibits mixing phonologies within the (code-switched) word, can be circumvented through the mechanism of momentary borrowing’ (Poplack 1985:235).

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- ⁶ Treffers-Daller (1994: 218) rightly points out that it is not easy to check the validity of the Equivalence Constraint because neither Poplack (1980) nor Sankoff & Polack (1981) specify whether they postulate equivalence at the level of lexical items or constituents.
- ⁷ On the one hand they state that 'the requirement of equivalence of surface structure between the two languages does not seem to hold' (Bentahila and Davies 1983: 319); for switches between adjectives and nouns, on the other hand, they state that the subcategorisation rule that in French some adjectives are pre-nominal while others are post-nominal must be satisfied (Bentahila and Davies 1983: 321).
- ⁸ Bentahila and Davies (1983: 320) take this claim further by stating that 'switching may occur between constituents exhibiting the surface structure of one language but not that of the other'. Despite the similarity between the subcategorisation constraint and my null hypothesis, they make predictions on different levels due to the different syntactic theories employed. WG, for example, does not recognise constituent structure (see chapter 5).
- ⁹ In Joshi's (1985) model there is no third code-switching grammar like in Sankoff and Poplack's (1981) account and also no overlap area between the two grammars like in Woolford's (1983) model.
- ¹⁰ Constituency analysis is applied only to coordinate structures.
- ¹¹ Phrases are defined by dependency structures which consist of a word plus the phrases rooted in any of its dependents.
- ¹² The utterance quoted under (16) follows two German utterances. I therefore regard *and* as a discourse marker which is syntactically unrelated to the rest of the utterance. The same analysis applies to the tag *„ nicht?* in example (18).
- ¹³ Treffers-Daller (1994) proposes dislocation as a strategy used to facilitate switching of constituents that cannot be easily switched.
- ¹⁴ Categorical equivalence is 'when the switched element has the same status in the two languages, is morphologically encapsulated, shielded off by a functional element from the matrix language, or could belong to either language' (Muysken 2000: 31).
- ¹⁵ 'Grammatical categories may be construed as congruent if they have similar syntactic function... have similar semantic properties ..., are phonologically similar (Sebba 1998: 8f).
- ¹⁶ For Myers-Scotton & Jake (1995: 985) congruence refers to a match between the ML and the EL at the lemma level with respect to linguistically relevant features' on three levels of structure: lexical-conceptual structures, predication-argument structures, and morphological realisation patterns.
- ¹⁷ I find the WG solution of incorporating different syntactic properties of WORDS in *isa*-hierarchies far more economical and convincing.
- ¹⁸ Treffers-Daller (1994) also assumes that constituents that are arguments are switched less easily than constituents that are not arguments.
- ¹⁹ The contrast between monolingual and mixed constituents is problematic, since even monolingual constituents are part of larger constituents, e.g. CPs. A logical consequence of the requirement that the ML structures code-switched constituents would therefore be that even EL islands would have to be grammatical according to the ML grammar. This objection is supposed to be met by the Embedded Language Island Hypothesis (see below).
- ²⁰ The ML is the source of more morphemes in a sample of discourse-relevant code-switching (Myers-Scotton & Jake 1995: 983).
- ²¹ The ML is the unmarked or expected choice as the medium of communication in the interaction type in which intra-sentential code-switching occurs (Myers-Scotton & Jake 1995: 984).
- ²² 'Congruence refers to a match between the ML and the EL at the lemma level with respect to linguistically relevant features' (Myers-Scotton & Jake 1995: 985).
- ²³ 'These three levels are (1) lexical-conceptual structure (mapping of intentions onto semantic and pragmatic feature bundles); (2) predicate-argument structure (mapping of thematic structure onto grammatical relations such as agent to subject, beneficiary to internal object); and (3) realising grammatical relations on the surface – e.g. word order, agreement morphology'. Myers-Scotton (1999: 18-19)
- ²⁴ Note that [+Q] as defined in the Matrix Language Frame model does NOT mean the same as in the standard principles & parameters and/or minimalist literature.
- ²⁵ Myers-Scotton (1999: 16) considers verb particles to be indirectly selected system morphemes.
- ²⁶ Muysken (2000: 15) makes a similar comment about Poplack's (1980) Spanish/English New York data.

²⁷ The main points on which the MLF model has been criticised relate to (1) the assumption of an asymmetrical relation between the languages involved in ALL types of code-switching; (2) the assumption that ALL mixed sentences have an identifiable matrix language; (3) the definition of system and content morphemes; and (4) the general tentativeness/vagueness of the psycholinguistic model.

²⁸ Turkish/Dutch, Arabic/English, Arabic/Dutch, Tamil/English.

²⁹ Compromise CS strategies (Myers-Scotton & Jake (1995: 994) are strategies employed by bilingual speakers to circumvent congruence problems across the CS language pair, e.g. bare forms and double morphology.

³⁰ Treffers-Daller (1994: 235) identifies dislocations, hesitations, and cognates as techniques employed by bilinguals to overcome difficult switch points.

³¹ Muysken's escape hatch model (2000: 30) includes categorial equivalence, alternation, adjunction and juxtaposition as possible escape hatches.

³² Muysken (2000: 7) states that congruent lexicalization could be interpreted as a combination of alternations and insertions.

5. Word Grammar

In this chapter I will describe the main characteristics of Word Grammar. In doing so, I will highlight why I think some of these characteristics make this theory of sentence structure more suitable for the analysis of (monolingual and) code-mixed data than other theories which readers may be more familiar with. I will start with the main distinctive ideas, followed by the levels of language and sociolinguistics. Word Grammar is best developed in syntax, but there has also been serious work in semantics and some more tentative explorations of morphology, sociolinguistics, historical linguistics and language processing. Since this thesis is an exploration of the (morpho-)syntax of German/English code-mixing, I will focus on syntax, morphology and sociolinguistics in this introduction to Word Grammar, and only make brief excursions into language processing. This introduction is both selective and abridged and I would therefore like to refer the reader to the main publications on which WG this chapter is based (Hudson 1990, Hudson 2002, Hudson 2003 and <http://www.phon.ucl.ac.uk/home/dick/WG>).

5.1. Locating Word Grammar

The roots of Word Grammar (WG) lie firmly in linguistics, and more specifically in grammar. It has been developing since the early 1980s and has grown out of a mixture of Systemic Functional Grammar (Halliday 1985, Hudson 1971), Dependency Grammar (Anderson 1971, Tesnière 1959) and Generative Grammar (Chomsky 1965). Word Grammar (Hudson 1990, 2001, 2003), however, can also be seen as a contribution to cognitive psychology. In terms of a widely used classification of linguistic theories, it is a branch of *cognitive linguistics* (Taylor 1989, Lakoff 1987, Langacker 1987; 1990). WG has been developed from the start with the aim of integrating all aspects of language into a single theory which is also compatible with what is known about general cognition. The WG assumption is that language can be analysed and explained in the same way as other kinds of knowledge or behaviour.

Naturally this is considered as a major advantage of WG over other linguistic theories for the study of bilingual speech: it is widely acknowledged that code-mixing is influenced by social and psychological factors (Muysken 2000) and a model that allows us to incorporate

this kind of information is better suited to describe language contact phenomena than theories that deal exclusively with language. Knowledge of more than one language, and the use of more than one language in one sentence, can be analysed and explained in the same way as knowledge of one language and monolingual language use. In other words, code-mixing is not "deviant" (Weinreich 1953: 73f.). A theory of language that aims to explain and analyse language in the same way as other kinds of knowledge or behaviour is perceived to be very apt for research into bilingualism. I will come back to this point throughout this chapter.

Word Grammar is a cognitive theory which views language as a **network** which contains both the grammar and the lexicon and which integrates language with the rest of cognition.

5.2. The name

As the theory's name suggests, the central unit of analysis is the **word**, which is central to all kinds of analysis, grammar, semantics and situation. For the reasons outlined above, I am only going to discuss grammar and situation here.

- Grammar. Words are the only units of syntax, as sentence structure consists entirely of dependencies between individual words; WG is thus clearly part of the tradition of *dependency grammar* dating from Tesnière (1959; Fraser 1994). WG syntax does not use phrase structure in describing sentence structure, because everything that needs to be said about sentence structure can be formulated in terms of **dependencies** between single words. Phrases are implicit in the dependencies, but play no part in the grammar. I will return to this point in the section on syntax (5.6.2).

Moreover, words are not only the largest units of syntax, but also the smallest. In contrast with Chomskyan linguistics, syntactic structures do not, and cannot, separate stems and inflections, so WG is an example of *morphology-free syntax* (Zwicky 1992: 354). I will elaborate on this point in the section on morphology (5.6.1).

These WG assumptions are controversial, not only in theoretical linguistics but also in syntactic research on code-mixing. We saw in the previous chapter (Chapter 4) that several researchers base models of code-mixing on functional categories ('closed-class items' Joshi 1985, 'system morphemes' Myers-Scotton 1993) and propose syntactic

constraints on code-switching that crucially depend on constituency structure/maximal projections (DiSciullo, Muysken & Singh 1986). By approximately 1995 it had become obvious that these constraints and models over-generalise. As discussed in more detail in Chapter 4, the main reasons why the 'government constraints' (DiSciullo, Muysken & Singh 1986, Muysken 1989) were found to be too restrictive when tested against data were, first, the inclusion of functional categories and, second, the fact that the government domain was too large. For these reasons a syntactic theory that rejects constituency structure and does not recognise functional categories (Hudson 1999) seemed an interesting and promising option to explore.

Thus the main reason why I chose WG for the syntactic analysis of my data, is that Word Grammar is a theory of language structure which takes the word as a central unit of analysis. Syntactic structures are analysed in terms of dependency relations between single words¹, a head/'parent' and a dependent. Phrases are defined by dependency structures which consist of a word plus the phrases rooted in any of its dependents. For intra-sententially switched data this is seen as an advantage over other syntactic theories because each parent only determines the properties of its immediate dependent. Therefore, for example, language specific requirements are satisfied if the particular pair of words, i.e. the head/parent and the dependent, satisfy them. A word's requirements do not project to larger phrasal units. If we want to formulate constraints on code-switching within WG, they have to be formulated for individual types of dependency relations. Because they do not affect larger units, they might be less prone to over-generalisations than constraints affecting whole constituents.

- Situation. Words are also the basic units for contextual analysis (in terms of deictic semantics, discourse or sociolinguistics).

Words, in short, are the nodes that hold the language-part of the human network together.

The most fundamental ideas of WG are: the central place of the word, the idea that language is a network, the role of default inheritance and the integration of sentence and utterance structure. I have already briefly discussed the first main idea and will now move on to the others.

5.3. Language as a network

The assumption that language is a network was an integral part of WG before networks became widely used in (psycho)linguistics. The idea that knowledge is held in memory as an **associative network** is quite uncontroversial in cognitive science. What is more controversial is that, according to WG, the same is true of our knowledge of words, so the sub-network responsible for words is just a part of the total associative network. Our knowledge of words is our language, so our language is a network of associations which is closely integrated with the rest of our knowledge.

Again, this view lends itself particularly well to code-mixing research. It is a well accepted fact in this research paradigm that adult bilinguals know, first of all, which language the words they use belong to. Secondly they know when to code-switch and when not to (code-switching as a marked or unmarked choice, for example, Myers-Scotton 1993), or when they should be in monolingual speech mode or when they can go into bilingual mode (Grosjean 1995). Thirdly, bilinguals also know which mixing patterns are acceptable in their speech community and which are not ('smooth' versus 'flagged' code-switching, for example, Poplack & Meechan 1995). This knowledge about language use is obviously closely integrated with other types of (social) knowledge.

One consequence of viewing language as a network is that the formal distinction between the lexicon and the rules (or "the grammar") are lost, but this conclusion is also accepted outside WG in Cognitive Grammar (Langacker 1987) and Construction Grammar (Goldberg 1995). One fundamental difference between associative networks in cognitive science (where all links have the same status) and WG, however, is that WG links are **classified** and labelled, as "stem", "subject", "adjunct" etc. The classifying categories range from the most general - the "isa" link (which I will discuss in more detail in section 5.4.) - to categories which may be specific to a handful of concepts, such as "goods" in the framework of commercial transactions (Hudson 2003). One of the immediate benefits of this approach is that it allows named links to be used as functions, in the mathematical sense, which yield a unique value - e.g. "the referent of the subject of the verb" defines

one unique concept for each verb. The function of the labels is to classify the links as same or different.

Furthermore, the view of language as a labelled network has consequences for the modularity debate, i.e. whether a distinct module of the mind is dedicated exclusively to language. To date both the strong version of modularity (Fodor 1973) and the no-modularity view seem to be wrong. The network approach, however, offers a third and intuitively very appealing possibility: if we focus on links, any network is inevitably modular in the much weaker (and less controversial) sense that links between concepts tend to cluster into relatively dense **sub-networks** separated by relatively sparse boundary areas.

This view has benefits for research on code-mixing. The only part of language which is widely² viewed as a network is the lexicon (Aitchison 1987:72). A strong version of modularity would, for example propose two distinct modules and lexicons for bilinguals. Although the one or two lexicon debate has been largely resolved in favour of the first view, the network idea offers the advantage of viewing a bilingual's two languages as sub-networks, with dense links between concepts that are similar in both languages and concepts that are different more loosely connected to the sub-networks³.

5.4. Default inheritance

Default inheritance is a formal version of the logic that linguists (and many other scientists) have always used: true generalisations may have exceptions. It means that characteristics of a general category are "inherited" by instances of that category. Inheritance is carried by the "isa" relation. Inheritance, however, only applies "by default", that is unless general properties are blocked by more specific properties. Default inheritance transmits properties down the is-a hierarchy by default; that is, a fact is automatically blocked by any other fact which conflicts and is more specific.

For example, because *snore isa* (i.e. is an example of) verb, it automatically inherits all the known characteristics of "verb" (i.e. of "the typical verb"), including, for example, the fact

that it forms its past tense by adding *-ed* to the stem, or that it has a subject. Default inheritance allows us to say that verbs form their past tense by adding *-ed* to the stem even if some verbs do not, because the specific provision made for these exceptional cases will automatically override the general pattern. This example is illustrated in Figure 1, which shows how default inheritance and isa relations handle regular and irregular past tense forms of verbs. Thus the fact that the past tense of COME is *came* automatically blocks the inheritance of the default pattern for past tense verbs.

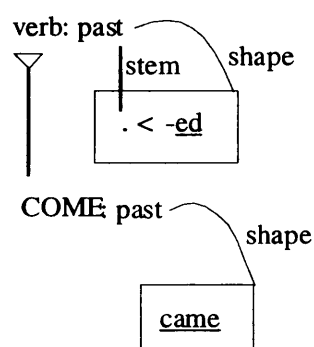


Figure 1

(Hudson 2002: Figure 2)

Figure 1, furthermore, illustrates WG notation, which consists of nodes connected to each other by arrows, with labels attached to the arrows. The notation for “isa” consists of a small triangle with a line from its apex to the instance. The “isa” relationship links the general concept at its base to the specific example connected to its apex.

A very important question for any system that uses default inheritance is whether it allows **multiple inheritance**, that is whether one concept can inherit from two or more different concepts simultaneously. WG allows multiple default inheritance. In other words, one node may be a several super-categories at the same time and inherit from all of them.

The multiple default inheritance system that transmits properties down the is-a hierarchy could possibly have enormous benefits for writing the grammar of bilingual speaker. The following exploration is just a sketchy idea how this could work and requires fleshing out, but the basic idea seems to work. Default inheritance allows us to build a maximally efficient system for bilinguals by locating the shared properties of words which ‘belong’ to

different languages higher up the is-a hierarchy and the language specific properties lower down in this hierarchy. English *come* and German *kommen*, for example, are both verbs (is-a verb). They therefore share certain characteristics: they have a similar meaning ('move towards'), they both have tense (present or past), they have a subject and the subject tends to be a pre-dependent noun etc. All these generalisable facts about German and English verbs can be located fairly high up in the is-a hierarchy. The features in which our two example words differ, for example that they have a different form (/k mən/ and /kʌm/ respectively), and that German *kommen*, when it is the complement of a subordinating conjunction or an auxiliary/modal, would be placed in clause final position, would be lower in the is-a hierarchy. Because of the way default inheritance works, characteristics of a general category are "inherited" by instances of that category only if they are not overridden by a more specific (e.g. language-specific) characteristic. A fact located lower down in the inheritance hierarchy of entities or relations takes priority over one located above it. Thus we could maximise the bilingual system by allowing generalisation by default inheritance and ensure that the language specific properties would automatically override the general pattern. For bilinguals this system would have the advantage that the grammatical system of a Castilian/Catalan bilingual, for example, would have fewer overriding/blocking language specific properties listed than that of a German/English bilingual and so on⁴.

5.5. Summary of the main distinctive ideas

A main distinctive idea of WG is that it views language as an inheritance network, i.e. a network in which every node and link is part of at least one inheritance hierarchy. Before I move on to the levels of language, I will summarise some of the consequences of this idea for a syntactic theory, and raise others which are considered advantageous to research into bilingualism.

First, language is part of a much larger general conceptual network in which many non-linguistic concepts are contained. What distinguishes the language area of this network from the rest is that its fundamental units are words and their immediate characteristics. Words may have a variety of links to each other and to other concepts. Language probably qualifies as a module in the weak sense that the links between words are denser than

those between words and other kinds of concept. This is a matter for debate, but at least some of the characteristics of language are also found elsewhere - the mechanism of default inheritance and the is-a relation, the notion of linear order (which I will discuss in more detail in section 5.6.2), and many other formal properties and principles.

The language network is a collection of words and word-parts (speech-sounds, letters and morphemes) linked to each other and to the rest of cognition in a variety of ways. The most important link is the “isa” relationship which classifies them and allows default inheritance. In WG, inheritance hierarchies are the sole means available for classifying concepts, which means that there is no place for feature-descriptions. To classify a word as a verb, we give it an is-a link to “verb”; we do not give it a feature-description which contains that of “verb”. Multiple inheritance allows words to be classified on two different “dimensions”: as lexemes (DOG, LIKE, IF, etc) and as inflections (plural, past, etc). Cross-classification is possible even among word-classes; for example, English gerunds (e.g. *Writing in Writing articles is fun.*) are both nouns and verbs (Hudson 2003), and in many languages, German, for example, participles are probably both adjectives and verbs. Figure 2 shows how this cross-classification can be incorporated into an is-a hierarchy.

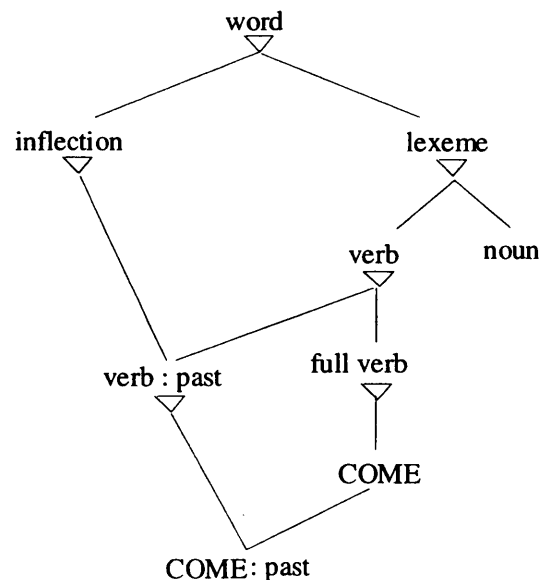


Figure 2
(Hudson 2002: Figure 6)

Unlike other theories, the classification does not take words as the highest conceptual category - it cannot do so if language is part of a larger network. WG allows us to show the similarities between words and other kinds of communicative behaviour by virtue of an is-a link from "word" to "communication", and similar links show that words are actions and events. This is important not only in the analysis of deictic meanings (which have to relate to the participants and circumstances of the word as an action) but also in sociolinguistics.

WG grammar can generate representations of actual utterances in contrast with most other kinds of grammar which generate only idealised utterances or sentences. A WG analysis of an **utterance** is also a network; it is simply an extension of the permanent cognitive network in which the relevant word tokens comprise a fringe of temporary concepts attached by "isa" links, so the utterance network has just the same formal characteristics as the permanent network. This blurring of the boundary between grammar and utterance is very controversial, but it follows from the cognitive orientation of WG. This characteristic is seen as another invaluable advantage of WG over other theories which is crucial for work based on natural speech data.

The status of utterances has a number of theoretical consequences both for the structures generated and for the grammar that generates them. The most obvious consequence is that word tokens must have different names from the types of which they are tokens. Another consequence of integrating utterances into the grammar is that a word token must be able to inherit from its type. Obviously the token must have the typical features of its type - it must belong to a lexeme and a word class, it must have a sense and a stem, and so on. But the implication goes in the other direction as well: the type may mention some of the token's characteristics that are normally excluded from grammar, such as characteristics of the speaker, the addressee and the situation. For example, we can say that the speaker is a German/English bilingual and so is the addressee; the situation thus allows code-mixing. This aspect of WG theory thus allows us to incorporate sociolinguistic information into the grammar, by indicating the kind of person who is a typical speaker or addressee, or the typical situation of use.

Treating utterances as part of the grammar has further effects which are important for the psycholinguistics of processing. The main point is that WG accommodates deviant input

because the link between tokens and types is guided by the rather liberal “Best Fit Principle” (Hudson 1990: 45ff): assume that the current token is-a the type that provides the best fit with everything that is known. The default inheritance process which this triggers allows known characteristics of the token to override those of the type. Lets take the deviant word /bʌsə/ in the following example

*TRU: xxx **and** warum waren keine bus(s)e [%pho: bʌsə]? Jen3.cha, line 331

/bʌsə/ is phonologically deviant for German (*Busse* is pronounced /busə/), and morphologically deviant for English, because the English plural suffix is –s, not –e. Although this word is deviant⁵, it can *is-a* its type, just like any other exception. But it will be shown as a deviant example. There is no need for the analysis to crash because of an ‘error’. The replies to *TRU’s question clearly show that the conversation does not crash.

*LIL: xxx [>] wegen einer bombe .

*MEL: xxx [>] **a bomb scare** . Jen3.cha, lines 332-333

This is obviously a big advantage of WG for natural speech data.

I turn to the specifics of language structure now before I say more about sociolinguistics.

5.6. Levels of language

WG distinguishes the traditional levels of language through its classification of entities and relations rather than by trying to divide all linguistic data into discrete components, which has the advantage of avoiding boundary disputes. The relevant node types are as follows:

- **words** of all degrees of generality from word tokens (e.g. *tokens* in this sentence) through lexemes (e.g. TOKEN) to inflectional categories (Plural) and word classes (Noun),
- **forms** of all sizes from morphemes (e.g. {s}) to word-forms (e.g. {tokens}), and of all degrees of generality from tokens to form classes (e.g. suffix),
- **sound** segments of all sizes and generalities,
- **letters** and other units of written language,

- any kind of entity or relation may act as the meaning of a word.

Sets of these entities are also needed; for example, word-strings are used in coordination.

As for relations, they fall into a range of types which include the following, all of which are relevant to language; the terms in brackets are specific sub-cases of the more general relation which heads the paragraph:

- **Meaning** (sense or referent) links a word to its meaning.
- **Realization** (base or fully-inflected-form), links a word to its component morphemes or larger form, and also links a form to its phonological structure.
- **Co-occurrent** (dependent, next, etc.) links a word to words that co-occur with it. It also handles the combinatorial patterns of co-occurring morphemes, sounds and letters.
- **Part** (part 1, last-part, etc.) links a larger form to the smaller forms within it, and is also found in many other areas of knowledge.

The overall architecture of language is summarized in Figure 3. One of the noteworthy features of this diagram is the absence of a separate lexicon. In WG, as in other “cognitive” theories (Langacker 2000), the difference between lexical and more general facts is merely a matter of degree; for example, the valency facts about TAKE are shown in the same network as those for more general categories such as Verb and Word.

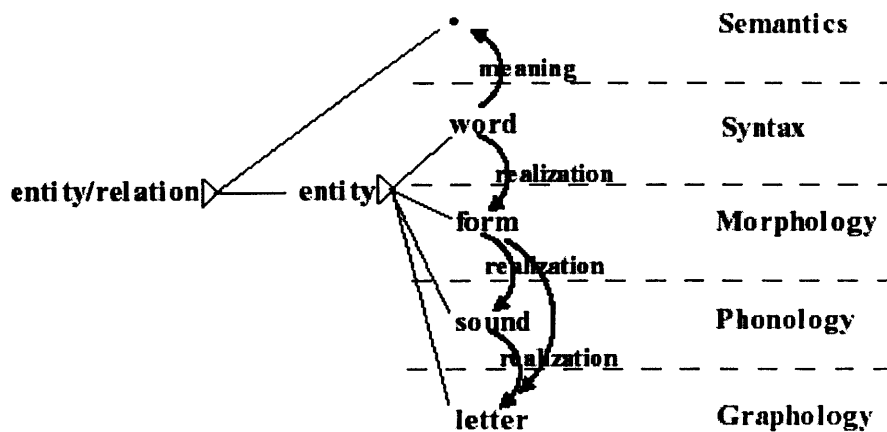


Figure 3

(Hudson 2004: Figure 4)

Out of the levels of language presented in Figure 3, graphology is irrelevant for my data, WG phonology is yet to be developed and semantics is not the focus of investigation of this thesis. I will therefore only discuss morphology and syntax.

5.6.1 Morphology

As mentioned earlier, the central role of the word in WG automatically means that the syntax is “morphology-free”. The internal structure of words is handled almost entirely by morphology, the units of which are forms. Forms are distinguished in notation by the use of the traditional morpheme boundary markers, {...}. Unlike words, forms have no meaning or syntactic categorisation, and unlike phonological units, they have no pronunciation. The relation between a form and its corresponding word is Realisation.

The WG treatment of morphology rests on the familiar distinction between two kinds of word: lexemes (e.g. CAT) and inflections (e.g. plural). Thanks to default inheritance, unmarked inflections can be treated simply as the default, so CAT is by default singular in contrast with its plural, CAT:plural. Only the marked form needs any mention in morphology. This distinction between lexemes and inflections allows a distinction between two kinds of Realisation: Base and Fully-inflected form (abbreviated to ‘fif’). A word’s base is determined by its lexeme, and its fif by inflection. This is the province of inflectional morphology, while derivational morphology deals with the relations between the bases of different lexemes.

Although derivational and inflectional morphology are very different at the level of words, at the level of form they offer the same range of possible morphological differences. These differences are each defined by a morphological function called a “variant”, so for example the plural form is the “s-variant” of the base and the agent noun is the “er-variant” of the source base. Variants are the bridge from words to morphological structure. In simple cases the variant of a form consists of a copy of that form combined with an affix ({farm} + {er} or {farmer} + {s}). These patterns are handled in terms of parts, with Part1 and Part2 occurring in that order. This kind of pattern is illustrated in Figure 4 for the ed-variant, of which the relation between {snore} and {snored} is an example.

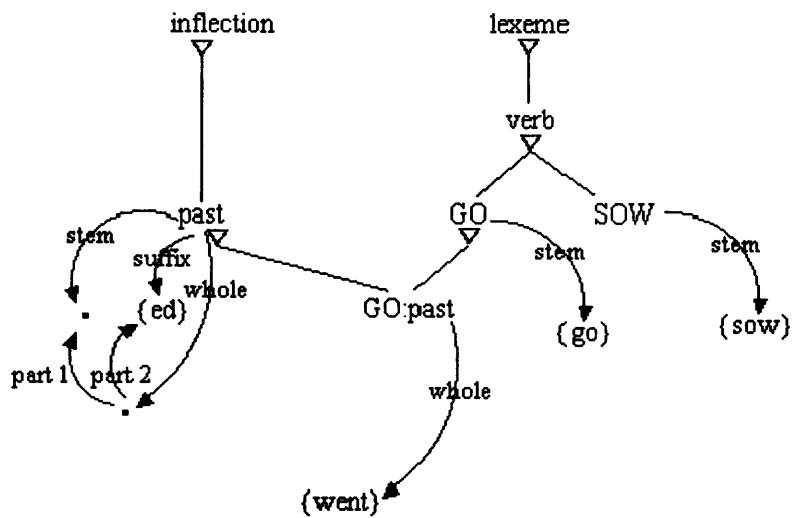


Figure 4

<http://www.phon.ucl.ac.uk/home/dick/WG/WG4PG/intro.html>

The default pattern shows that a past-tensed verb's whole/fif (its complete word-form) consists of its stem plus its suffix {ed}; the whole is a word-form which contains these two morphemes as its parts. It is easy to see from Figure 4 how this WG treatment of morphology can handle morphologically integrated stems in bilingual speech. Example (1) in chapter 4, repeated here for convenience sake, contains the English stem *long* as Part1 and the German es-variant as Part 2, in that order.

*DOR: und heuer fahren wir nach **Harringate** # for a@u long-es weekend .

Jen3.cha, line 185.

Because these patterns are handled in terms of parts, Parts 1 and 2 can come from different languages.

Exceptions like vowel-change and suppletion, for example, are easily accommodated in WG morphology thanks to default inheritance (see Hudson 2004).

5.6.2. Syntax

Syntax is the best developed part of WG. The WG view of syntax, however, is controversial because of its rejection of phrase structure. Hudson (1990: 104) states that every generalisation which can be stated in terms of phrase structure can be stated at least as well in terms of dependencies between single words. WG thus belongs to the family of dependency-based theories, in which syntactic structure consists of dependencies between pairs of single words⁶.

A syntactic dependency is a relationship between two words that are connected by a syntactic rule. Every syntactic rule (except for those involved in coordination, see footnote 3) is “carried” by a dependency, and every dependency carries at least one rule that applies to both the dependent and its head/“parent” (the word on which it depends). In other words, the network of syntactic relations is generated by inheritance from the grammar network which sanctions each of the individual dependencies. This is a constraint-based grammar, though it allows defaults to be overridden. These word-word dependencies form chains which link every word ultimately to the word which is the head of the phrase or sentence. In other words, each word in a sentence is in the centre of a small network of links to other words, and these networks combine into a network for the whole sentence. Consequently the individual links are asymmetrical, with one word depending on the other for its link to the rest of the sentence.

I have already stated in the introduction to this chapter that these properties of WG are viewed as an advantage for syntactic code-mixing research. Dependency relations between two words, be they from the same language or not, have to be sanctioned by syntactic rules; so code-mixed and monolingual dependency relations are clearly subject to syntactic constraints. BUT these constraints apply ‘locally’, i.e. to the dependency relations between individual words. In Chapter 4 we identified a problem common to all the ‘government’ based constraints on code-switching proposed in the literature: they over-generate. Constraints formulated in WG are less likely to over-generate because they apply to individual dependencies only. This does not mean that WG does not accept larger syntactic units or the principle of endocentricity. ‘Dependency’ is just the name for the relation between the heads of all the other phrases within the phrase and its head word.

The Null Hypothesis, which states that each word in a dependency must satisfy the constraints imposed on it by its own language, thus constrains code-mixing (and monolingual sentences), but the constraints generated by the WG network only apply to two words at a time. These two words may belong to one phrase or more than one. So WG rules constrain the syntax of code-switched and monolingual sentences alike, but they are less likely to over-generate because phrases are built out of dependencies between individual words. The example in Figure 5 illustrates all these characteristics of WG syntax.

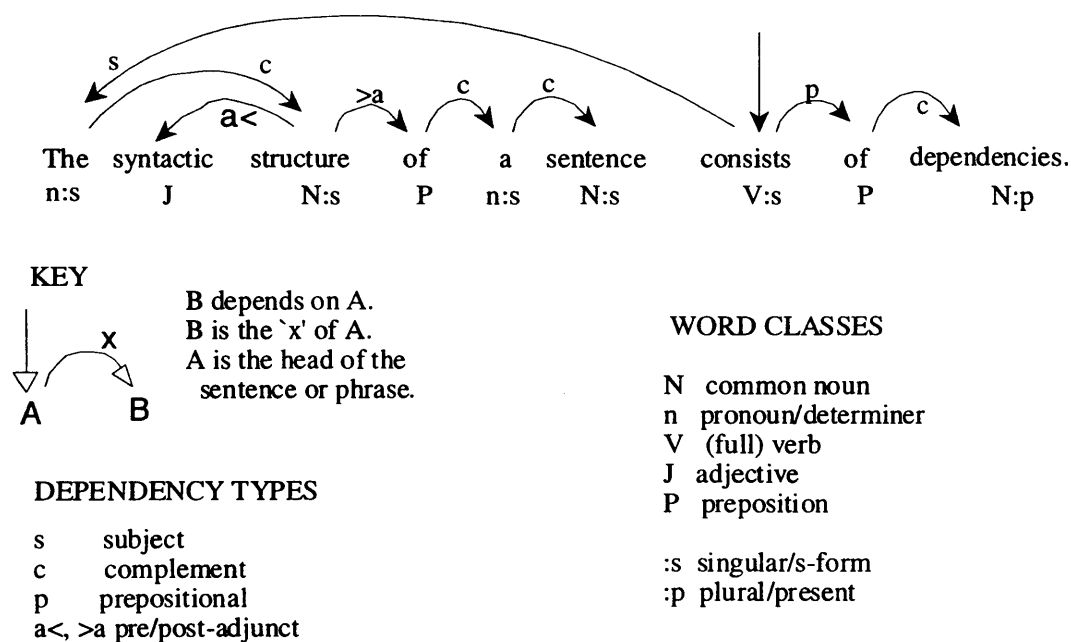


Figure 5
(Hudson 2002: Figure 9)

Any rule which relates two words implies a dependency (see KEY) between them:

- one depends on the other for its choice of word class, inflection or lexical item (government of agreement);
- one takes its position from the other
- one modifies the meaning of the other.

Typically these different kinds of dependency coincide – e.g. if one word governs the inflectional class of the other, the latter takes its position from the former and modifies the meaning of the former. In other words, grammatical dependencies are usually cluster concepts.

The dependency analysis of the example in Figure 5 furthermore has a totally flat structure. A surface dependency analysis, however, can always be translated into a phrase structure by building a phrase for each word consisting of that word plus the phrases of all the words that depend on it; but dependency analysis is much more restrictive than phrase-structure analysis because of its total flatness (I will return to this in the next paragraph but one).

A completely surface structure analysis is seen as another benefit of WG over other theories of language structure for code-mixing research: linguists working on code-mixing during times when Chomskyan frameworks still stressed the difference between surface and deep-structure never really knew what to do with D-structure because code-switching clearly seems to be a surface structure phenomenon. Romaine (1989: 145) concludes her discussion of the government constraint with the following statement 'data such as these [code-mixing data] have no bearing on abstract principles such as government [...] because code-switching sites are properties of S-structure, which are not base generated and therefore not determined by X-bar theory'. This problem does not emerge when one works with WG because of its totally flat, i.e. surface, analysis.

The extra richness of dependency analysis lies partly in the labelled dependency links, and partly in the possibility of multiple dependencies. In a flat structure, in contrast with phrase structure, it is impossible to distinguish co-dependencies (e.g. a verb's subject and object) by configuration, so labels are the only way to distinguish them, as illustrated in Figure 5.

Syntactic structures, however, can be much more complex than the example in Figure 5. We shall briefly consider just two kinds of complication because they are particularly relevant to the analysis of my data: structure-sharing and coordination. **Structure-sharing** is found when one word depends on more than one other word - i.e. when it is "shared" as a dependent. Figure 6 illustrates two kinds of structure-sharing - in raising (*you* shared by *have* and *been*) and in extraction (*what* shared by *have*, *been*, *looking* and *at*). The label *x<* means extractee, and *r* means sharer (otherwise known as "xcomp" or incomplement).

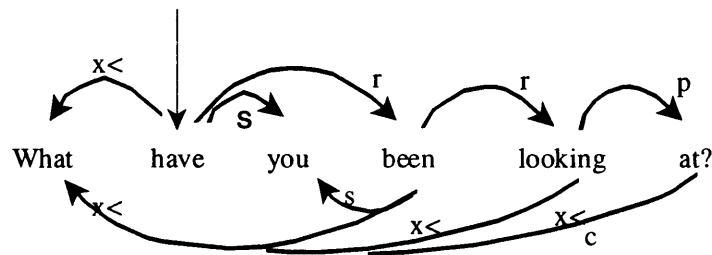


Figure 6
(Hudson 2002: Figure 10)

This diagram also illustrates the notion surface structure mentioned above. Each dependency is licensed by the grammar network, but when the result is structure-sharing, just one of these dependencies is drawn above the words; the totality of dependencies drawn in this way constitutes the sentence's surface structure. In principle any of the competing dependencies could be chosen, but in general only one choice is compatible with the geometry of a well-formed surface structure, which must be free of “tangling” (crossing dependencies - i.e. discontinuous phrases) and “dangling” (unintegrated words). There are no such constraints on non-surface dependencies.

Figure 6 furthermore illustrates how WG handles word order: dependencies guarantee that phrases will be intact because each word always takes its position from the words on which it depends. We can make a simple distinction in dependency analysis between dependencies that are relevant to word order and those that are not: a word's ‘highest’ dependency is relevant, while all the others are not (i.e. words can raise into higher structure but they cannot lower). For example, in Figure 6 *what* depends on both *have* and *at*, but only the former dependency is relevant to word order. Consequently *what* follows the word order rules for extractees rather than that of complements. Hence also the possibility of stylistic reordering so that a ‘long’ (or heavy) object can stand after the sharer/complement in extraposition constructions.

Another argument for a dependency analysis is that some phrases do not move around as single units; e.g. in German it is possible to move a participle or infinitive to the start of the clause without moving the rest of the ‘verb phrase’. *Cato hat eine Maus gegessen* can change to *Gegessen hat Cato eine Maus*. This is easier to explain in terms of

dependencies than in terms of phrases because we can say that any dependents of the participle may 'raise' so that they are also dependents of the auxiliary. This choice is made separately for each dependent rather than once and for all for the whole phrase.

The other complication I will discuss is **coordination**. The basis of coordination is that conjuncts must share their "external" dependencies - dependencies (if any) to words outside the coordination. The structure of the coordination itself (in terms of conjuncts and coordinators) is analysed in terms of word-strings, simple undifferentiated strings of words whose internal organisation is described in terms of ordinary dependencies. A word string need not be a phrase, but can consist of two (or more) mutually independent phrases as in the example of Figure 7, where the coordination and conjuncts are bounded by brackets: {[....] [....]}.

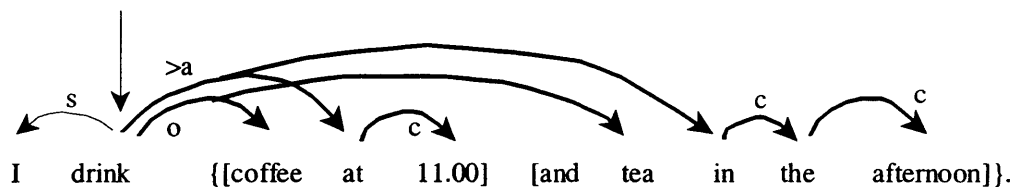


Figure 7

(Hudson 2002: Figure 11)

In the last part of this section I introduce the Word Grammar functions⁷ and notation scheme used in section 6.4. The hierarchical classification of syntactic relations makes more distinctions for the dependents of verbs than for other word classes. I will give the most specific classification for the dependency concerned. The grammatical functions are listed and discussed in the alphabetical order of their notational abbreviations. I will furthermore focus on the shared properties of these functions in German and English rather than the differences. These will become obvious in the analysis.

Adjunct

Notation: "a" – "a<" for pre-adjunct or ">a" for post-adjunct

"Adjunct" is the name of one of the basic grammatical functions. Every dependent is either an adjunct or a complement. Roughly speaking an adjunct is a dependent that selects the word it depends on. Adjuncts are approximately equivalent to traditional modifiers or adverbials. The distinction between adjuncts and complements is not always

straightforward but the principle is that complements fill syntactic slots provided by the word they depend on, whereas adjuncts do not.

Complement

Notation: “c” or see specific sub-types

“Complement” is the other fundamental type of grammatical function; it is contrasted with subject, and contrasting with adjuncts⁸. According to WG, most word-classes have some members that have complements. “c” applies only to complements of prepositions, determiners and subordinators, because complements of verbs are further sub-classified. In some cases the complement of a word must be a noun, while in others it must be a verb or even an adverb. For example, in the phrase *in London*, *London* is the complement of *in*, the complement of *because* has to be a tensed or finite verb, whereas the complement of *smell* must be an adverb.

Particle

Notation: “e” (from the final letter in “particle”; “p” is needed for “prepositional”)

“Particle” is a kind of verb complement. A particle must be a preposition, but it must not have a complement. It is often selected by its verb. A typical English example is *up* in *I looked up the word*. The distinguishing characteristic of particles from prepositionals, in English, is that the former may separate a verb from its object, as in the example sentence. In the following German example, *geben* selects the preposition *auf*, therefore *auf* is the particle of *geben* in *Ich gebe es auf*. German particles cannot separate a verb from its object; they either follow it, as in the above example, or are cliticised to the verb, as in *Ich habe es auf-gegeben*.

Free complement

Notation: “f”

“Free complement” is also a kind of verb complement. It is called “free” because it is free of specifically syntactic restrictions beyond the restriction that it must appear - i.e. it is syntactically obligatory. By far the most common verb that takes a free complement is the equative/identifying verb *be*, as in *This is where we stayed*, where *where we stayed* is a free complement.

Negative (*not*)

Notation: “n”

“Negative” is another type of verb complement: the word *not* when it depends on a tensed auxiliary verb; e.g. *not* is the negative of *is* in *It is not raining*.

Sharer

Notation: “r” (for “sharer”)

“Sharer” is another kind of verb complement. As the name suggests, this complement shares its subject with the parent verb. In *It is raining*, *raining* depends on *is*, so *raining* is the complement of *is*. Both *is* and *raining* require the subject *it*. Because *raining* shares its subject with *is*, *raining* is the sharer of *is*. Whatever word is the subject of *is* must also be the subject of *raining*.

Subject

Notation: “s”; in the tables relating to Sections 6.4.2 I distinguishing s< from >s for German; this shows the subject’s actual position as left or right dependent, but does not necessarily imply that subjects can be post-dependents in German (see below).

A subject is normally a noun. Any tensed verb, both in German and in English, must have a subject. In both languages a verb’s subject normally precedes it; i.e. the normal rule for subjects locates them before the verb, but exceptionally this is overridden (e.g. subject-auxiliary inversion). Subjects have nominative case in German (and possibly in English), and subjects and the tensed verb they depend on ‘agree’ in the sense that they co-vary in features such as person, number and case.

Object

Notation: “o”

“Object” is another kind of verb complement. In my analysis I do not distinguish between direct and indirect objects. The object relationship is very similar to the subject relationship in both languages in that the parent is typically a verb and the dependent is typically a noun. Objects are types of dependency in both languages, but the position of the dependent may differ. English objects are almost always post-dependents (the exception is extraction), whereas German objects are frequently pre-dependents of clause final verbs.

Prepositional

Notation: “p”

“Prepositional” is another kind of verb complement. As the name suggests, it is always a preposition. What distinguishes prepositionals from other complements of verbs that just happen to be prepositions is that the preposition is selected/determined by the verb; for example, after *rely* the only preposition that is possible in English is *on*. The German verb *sich verlassen* selects *auf* ‘rely on’ (Durrell 1996: 372). *Auf* and *on* are complements, not adjuncts. The only complements that would just “happen to be a prepositions” are prepositions, which I discussed above.

Extraposée

Notation: “>x”, it follows its parent

“Extraposée” is a grammatical function that is only relevant to word order. It is a construction type in which a “heavy” element, typically a clause, is shifted out of its expected position to a much later position at the end of a higher clause. It is a device for allowing a post-dependent of one word to take a much later position in the sentence by “pretending” that it is a post-dependent of some higher-ranking word. For example, in *It surprises me that it rained* the word *that* is extraposee of *surprises* as well as being complement of *it*. In intra-sententially code-mixed utterances extraposition, like extraction, could potentially be useful to resolve word order differences.

Extractee

Notation: “x<”, it precedes its parent

“Extractee”, also known as “topicalisation”, is an example of pre-dependent. “Extractee” is the relationship between a front-shifted word and the verb from which it takes its position. In *Examples like this I can never analyse*, *examples* is the object of *analyse*. It would normally follow *analyse*; but it has been shifted to a position at the front of the sentence where it can depend on the sentence root, *can*, so it is the extractee of *can*. The extractee relationship is relevant only to word order. It could therefore be useful to resolve word order issues in intra-sententially mixed utterances.

5.6.3. Notational summary

To conclude the sections on morphology and syntax, I will present the notational summary for the word classes, inflections and syntactic functions recognised in WG. The grammatical functions are discussed in more detail in section 6.4.1 before they are applied to my corpus. The categories listed in the notational summary are all quite traditional⁹, and traditional names are used where they exist.

Word classes		Inflections		Functions	
Adverb	A	NOUN		Post-adjunct	>a
Coordinator	C	Singular	:s	Pre-adjunct	a<
		Plural	:p	Complement	C
Adjective	J	VERB		Pre-complement (before 's, -ing)	c<
Pronoun	n	Past	:a	Particle	E
Common noun	N	Active (-ing)	:g	Free complement	f
name (proper noun)	nN	Infinitive	:l	Indirect object	i
		Imperative	:m	Negative (not)	N
noun (N or n)	M	Passive (-en)	:n	Sharer	r
Preposition	P	Present, plural	:p	Subject	S
THAT _{sub}	t	Present, singular	:s	Object	O
Auxiliary verb	V	Perfect (after HAVE)	:r	Prepositional complement	p
full verb	V	Gerund	:N	Extraposee	>x
verb (V or v)	W	AUXILIARY VERB		Extractee	<x
		Negative	...n	Proxy	y
		Inverted	...v		

Notation - summary (<http://www.phon.ucl.ac.uk/home/dick/enc.html>)

5.7. Sociolinguistics

Two of the most important discoveries in modern (socio)linguistics are the existence of 'inherent variability' (Labov 1969) and the style axiom (Bell 1984). Inherent variability is the coexistence of alternative 'ways of saying the same thing' within the speech of a single speaker who alternates between them in a statistically regular way. Bell (1984: 151) related intra-speaker variation to inter-speaker variation by formulating the 'style axiom':

variation on the style dimension within the speech of a single speaker derives from and echoes the variation which exists between speakers on the social dimension. In other words, the degree of style variation never exceeds the degree of social variation and one mirrors the other. Both notions are clearly relevant to code-mixing, as code-mixing has been shown to display a considerable amount of inherent variability but the code-switching of an individual presumably never exceeds the mixing patterns found in the bilingual community.

The study of inherent variability has turned into a major area of linguistic research and greatly increased our understanding of variation in both place and time. But most of this work has fallen clearly within the sphere of sociolinguistics, with its special focus on the relationships between linguistic and social structures; very little could be described as the study of language structure as such, and even less has had any influence on (synchronic) theories of language structure. Hudson (1997) points out that it is hard to think of examples where statistical data on inherent variability have been used as evidence in discussions of language structure. One obvious example is Labov's idea of associating transformations or phonological rules with probabilities to give "variable rules" (Labov 1972: 216ff, Cedergren and Sankoff 1974). Another study which combines quantitative data and context-free phrase structure grammar on code-switched data is Sankoff and Poplack's (1981), but none of this work really challenged, or even influenced, the (then) current views on language structure, and 'the variable rule as a part of linguistic theory has quietly been abandoned' even in sociolinguistic studies of variation (Fasold 1990: 256).

After Labov's early work there was a long period of separation between the work on inherent variability and work on language structure. Although the units that varied were parts of language - words, sounds, morphemes, constructions – inherent variability was left to the sociolinguists on the grounds that this variation had nothing to do with anything that theoretical linguists were interested in. A typical view is expressed by Smith (1989:180): to be of interest to a linguistic theorist, quantitative variationist data 'have to have implications of some kind for the theory concerned, by supporting or contradicting one of the claims derivable from it'. More recent attempts to use variable data as evidence for particular theoretical positions on the structure of language are included in Beals et. al. (1994), and Hudson's (1997) reply to Guy (1994) and Kroch's (1994) papers in the

aforementioned volume. Hudson (1986) and Romaine (1982) have furthermore asked what the existence of variability implies for theories of language structure, but have mainly produced general statements of principles or programmes for future research. Sociolinguists (DiSciullo, Muysken & Singh 1986) interested in language structure, on the other hand, have used notions of theoretical linguistics to, for example, constrain code-switching by government. We have already seen that these attempts were not very successful either.

In the following paragraphs I intend to present some of Hudson's (1996, 1997, 2004) ideas on how sociolinguistic information can be incorporated into a theory of language, before I use statistical data on inherent variability in a discussion of language structure.

Sociolinguistic information and knowledge can be more easily accommodated in WG than in many other linguistic theories because WG stresses the similarities and links between language and other kinds of knowledge. One view of sociolinguistics is that it deals with the social meaning of words, i.e. why speakers use a certain variable with certain interlocutors in a specific situation etc. So we are concerned with a kind of meaning: information about the world which follows from the choice of words (or language, for that matter). Social meaning generally belongs to the speaker and/or the addressee who are classified in terms of some general social category. The advantages of a network analysis are especially obvious in cases where linguistic categories are related to non-linguistic ones. The WG analysis of *mummy* in a sentence like *Mummy will be back soon* is shown in Figure 8. In this diagram Mother is treated as a relation between two variables.

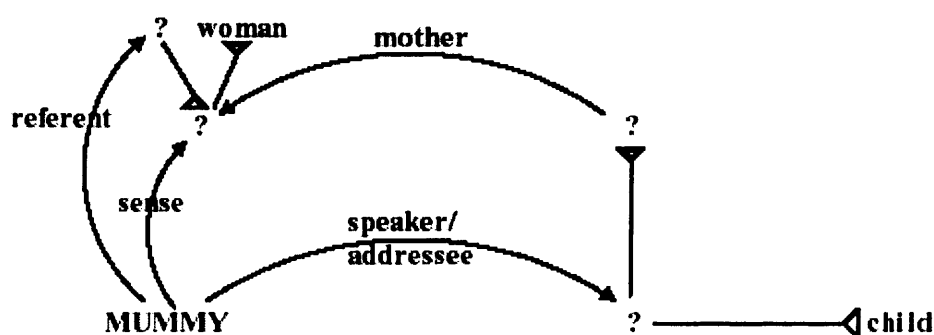


Figure 8
(Hudson 2004: Figure 13)

One of the strengths of the network approach for social meaning is that it allows links to have different “strength”; these are an essential ingredient of the model of spreading activation, and are highly relevant to quantitative work.

One example illustrating this is Hudson’s (1997) re-interpretation (in terms of prototype networks) of Gregory Guy’s (1994) statistical analysis of the data on t/d loss, i.e. the exponential model. Hudson (1997) argues that a prototype-based network theory that is based on default inheritance and uses entrenchment, like WG, can explain variable t/d loss as well (if not better) than Guy’s exponential model. The explanation is highly relevant to how a competence model can handle inherent variability and I will therefore present it in more detail.

Hudson (1997) assumes that the pronunciations in which t/d is present are typical, and those in which it is absent are rule-governed exceptions. He eliminates the variable (delete) rule by stipulating that a language user/learner who observes variable t/d deletion will arrive at the generalisation that any word that ends in /t/ or /d/ following another consonant has two alternative forms. Figure 9 presents the relevant part of the user’s language system after the generalisation has been made and illustrates how default inheritance allows the generalisation about variability to apply freely to any form, while also allowing individual cases to be recorded in full.

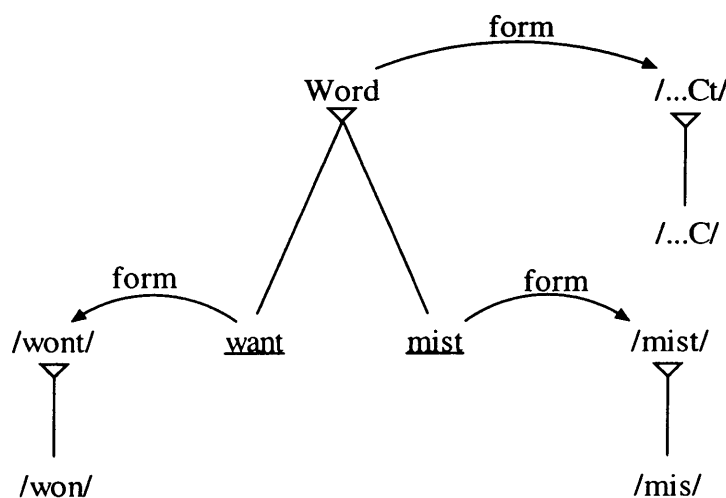


Figure 9 (Hudson 1997: Figure 4)

The main point of Figure 9 is that there is no 'delete rule', just a pair of related structures of which one contains t/d and the other lacks it. If the first structure (...Ct) matches a word's form, then the word should have an alternative form, otherwise not.

As already noted, each part of this network structure has some degree of "entrenchment" which reflects the experiences of the person concerned. In the case of t/d loss, each example of the normal pattern supports the form with t/d, and exceptional examples reinforce the exceptional pattern without t/d. For present purposes the degree of entrenchment of a concept can simply be presented as a probability of that concept being preferred to any relevant alternatives (without any commitment as to how this probability is reflected neurologically). This is presented in Figure 10, where the figures in angled brackets present the probabilities.

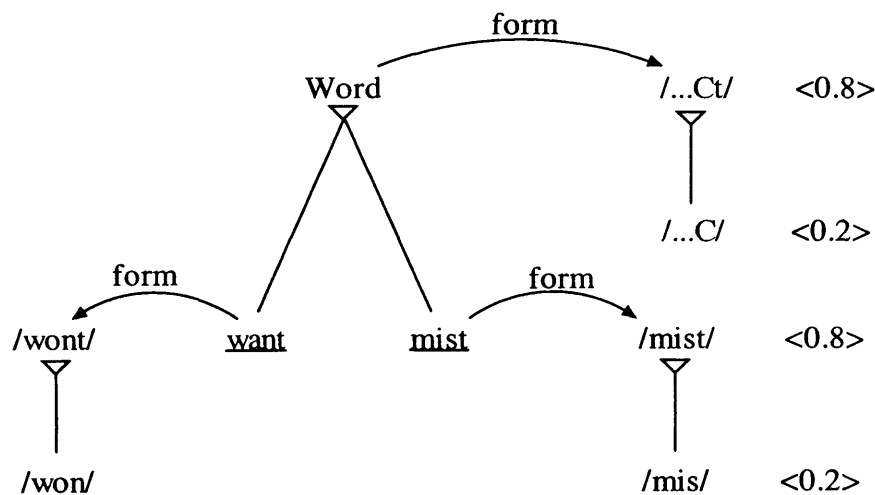


Figure 10
(Hudson 1997: Figure 5)

It is important to note that the figures for individual cases need not be the same. Cases of lexical diffusion would seem to suggest the contrary (Hudson 1980: 168ff). And presumably the entrenchment value for the general rule in such cases could be different from all the individual rules.

The analysis of t/d loss proposed by Hudson (1997) is declarative and non-procedural and requires just two elementary operations: pattern-matching and default inheritance. Speakers and hearers need to know that alternative forms can be used instead of the basic form, and in a real life context the choice between them is influenced by the linguistic and social context in ways that Hudson (1997) left unexplored. Fig. 11 just hints at how these extra variables could be introduced.

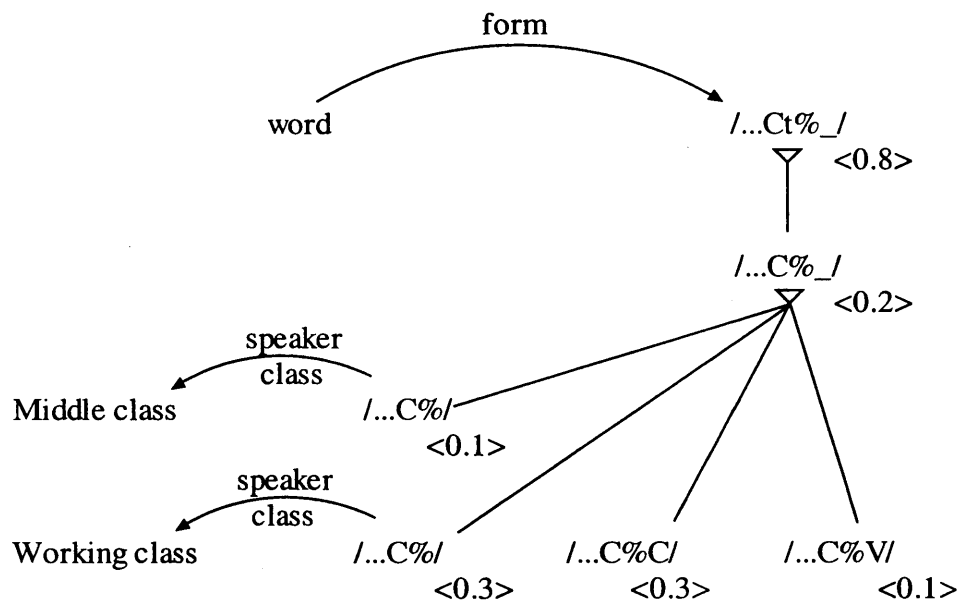


Figure 11
(Hudson 1997: Figure 6)

The only assumption we need to make is that these influences are constant whenever the choice is made¹⁰.

The reason why I find the proposed model so appealing and went into considerable detail in presenting it is because it is a model of competence – not performance. Inherent variability and variable rules are generally (rightly or wrongly) associated with performance, and to my knowledge there is no other model that presents variability and sociolinguistic information as part of a speaker's competence. I strongly believe that linguistic variation that is influenced by social factors **is** part of every speaker's competence and a (more fleshed out) model of how speakers exploit their sociolinguistic competence is therefore required within linguistic theory.

This model is possible because WG assumes that linguistic knowledge is closely integrated with other relevant knowledge, and it is a commonplace that general knowledge varies in entrenchment: the more frequently a word is used, the easier it is to retrieve (Aitchison 1987:180). These two facts support a model of knowledge in which linguistic concepts are closely linked to non-linguistic concepts and carry quantitatively different entrenchment values.

In summary the advantages of WG over other linguistic theories for code-mixing research are seen to be:

- Word Grammar requires less analysis than constituency-based models because the only units that need to be processed are individual words. Larger units are built by dependency relations between two words which can be looked at individually.
- As syntactic structure consists of dependencies between pairs of single words, constraints on code-mixing are less prone to over-generalisation than constraints involving notions of government and constituency.
- Word Grammar allows a single, completely surface analysis (with extra dependencies drawn below the sentence-words). Code-mixing seems to be a surface-structure phenomenon, so this property of WG fits the data.
- Knowledge of language is assumed to be a particular case of more general types of knowledge. Word Grammar accommodates sophisticated sociolinguistic information about speakers and speech communities. This is important for language contact phenomena that are influenced by social and psychological factors;
- In contrast with most other syntactic theories, Word Grammar recognised utterances.

I do not claim that the present work illuminates theories of language structure but it confronts a linguistic theory, Word Grammar, with statistical data, and shows that this theory of language structure can be successfully and illuminatingly used for the analysis of monolingual and code-mixed constructions.

¹ Constituency analysis is applied only to coordinate structures.

² A fashionable view is that even here only lexical irregularities are stored in an associative network, in contrast with regularities that are stored in a fundamentally different way, as rules (Pinker and Prince 1988).

³ This view is similar to the one proposed by Woolford (1985) within the Principles and Parameters framework.

⁴ This system implies that code-mixing ought to be less frequent among typologically quite different language pairs. I am not sure this is empirically borne out but could be tested by applying a methodology that is similar to Sankoff & Poplack (1981) or mine.

⁵ An alternative analysis of this example would be that it is ambiguous, i.e. it conforms to two different models. The stem conforms to the English phonological model and the suffix conforms to the German plural suffix; i.e. it is a morphologically integrated borrowed stem.

⁶ As we shall see below, WG also recognises word-strings, but even these are not the same as conventional phrases.

⁷ This summary is based on the Word Grammar Encyclopaedia
<http://www.phon.ucl.ac.uk/home/dick/wg.html>.

⁸ More accurately, in WG, adjunct contrasts with valent, which subdivides into subject and complement.

⁹ The most obvious difference to other notational summaries is that articles and determiners are not included in the list of word classes. This is because determiners are analysed as pronouns in WG. For a brief explanation and evidence see <http://www.phon.ucl.ac.uk/home/dick/wg.html>.

¹⁰ Note that this is equivalent to Guy's assumption that t/d-loss is a single variable rule which always has the same statistical parameters. I am, however, not sure we can make this assumption.

6. Quantitative Analysis

In this chapter I present the quantitative analysis of my German/English data. I will start with a description of the five corpora the analysis is carried out on (6.1). Section 6.2 presents and discusses basic frequency data: the distribution of languages in the corpora, individual variation in the distribution of languages among the core group of informants, the frequency of mixed utterances and the frequency of code-switches. Section 6.3 deals with a general quantitative analysis of grammatical relations. I will again start with the distribution of elements involved in grammatical relations from the two languages, and then move on to the relation between syntactic dependencies and adjacency/distance in the monolingual and code-mixed speech of my informants. I will explore this issue from various angles and will also compare the effects of direct and indirect syntactic relations with the influence of the language of the head and the direction of dependency relations in monolingual and mixed utterances.

6.1. The corpora on which the quantitative analysis is based

In this chapter I will be referring to five corpora: the total CORPUS, the CORE CORPUS, the SAMPLE CORPUS, the CODE-MIXED CORPUS, and the SAMPLE CODE-MIXED CORPUS. All five corpora are based on the audio recordings collected in 1993. The latter four corpora are selections of texts from the total corpus; the SAMPLE CORPUS and the CODE-MIXED CORPUS, however, are largely independent¹. I will now briefly describe how and why these corpora were compiled.

The CORPUS is the total collection of texts transcribed in the LIDES format. A survey and description of these data can be found in Chapter 2. I include the distribution of languages in the total LIDES transcribed corpus in Table 1 of this chapter. Otherwise, however, the overall corpus was not used for the quantitative (and qualitative) analysis. Patterns of language use² vary considerably in files Imot.cha, Isper.cha, Ifen.cha, Iariel.cha and Ihog.cha and the speech data from these files were therefore not considered suitable for comparative linguistic analysis.

When I use the term CORE CORPUS, I refer to the four files (Ibron.cha, Jen1, 2 and 3.cha) transcribed from the group recordings with the core group of informants (*DOR, *MEL, *LIL, *TRU) plus the researcher. The number of words (see Table 1) in these files is sufficient to answer the research questions asked in this study. These data are

furthermore highly comparable (see Section 6.2) and were therefore chosen as the main body of texts the analysis is carried out on.

The SAMPLE CORPUS is a sample of texts from the core corpus. This corpus was extracted from the core corpus for two main reasons. Firstly, a full manual³ analysis of the word classes and grammatical relations in the core corpus would have exceeded the scope of this study. Secondly, researchers studying code-mixing have so far mainly concerned themselves with the code-mixed utterances in their corpora. One main aim of this study has always been to compare the intra-sententially mixed examples in this corpus with monolingual Emigranto. The sample corpus is designed to provide a baseline for Emigranto as a mode of interaction in general, against which the code-switched examples can be compared⁴. The sample corpus consists of six coherent texts of approximately 340 words each⁵, extracted around six randomly selected line numbers⁶ out of the total number of lines in the core corpus. I assume that the sample corpus is large enough for the quantitative and qualitative analysis, because Biber (1998) found that for many common grammatical features counts are relatively stable across 1,000 word samples from a text (the sample corpus is twice that size, see Table 1). I furthermore assume that the sample corpus is representative of the core corpus because it was randomly selected.

The CODE-MIXED CORPUS consists of all the utterances in the core corpus that contain words from both languages, i.e. all intra-sententially code-mixed utterances. Unlike the sample corpus, the code-mixed corpus was not randomly selected from the core corpus. It was generated by automatically searching the core corpus for utterances that contain words with English and German language tags, i.e. words ending in @2 and @4. The CLAN command that generates the code-mixed corpus is “combo +s*\@4^*\@2+*\@2^*\@4”, i.e. find all strings containing a German word followed by an English one and vice versa. I present the overall distribution of languages in all four corpora mentioned up to now in Table 1 in the next section.

The SAMPLE CODE-MIXED CORPUS consists of approximately 70 randomly selected utterances (500 words) from the code-switched corpus. These utterances are proportionate to the number of mixed utterances each speaker contributed to the code-switched corpus. They were analysed according to the language of adjacent words and direct or indirect pre- or post dependency relation. Only the analyses presented in Section 6.3.3 are based on the sample code-mixed corpus. I will explain the coding of this corpus in more detail at the beginning of that section.

6.2. Frequency data

In this section I provide basic frequency data on the distribution of German and English in the different corpora and by individual speakers. The last two sections in 6.2 deal with the frequency of code-mixed utterances and code-switches. Data of this type are useful in providing the necessary background information and reference materials for the more detailed syntactic analysis. I make multiple comparisons between variables and assume the null hypothesis in most cases. The interpretation of associations in studies in which the effect of many variables is measured has to be much more cautious than in studies in which a specific a priori hypothesis is specified. The interpretation of the results of the significance tests will therefore be cautious and the findings of this (6.2) and the next section (6.3) should be seen as generating hypotheses that will be tested, rather than as definite results.

6.2.1. Distribution of languages in the four corpora

Table 1 summarises the distribution of languages in the different corpora.

	German		English		Total	
	Tokens	%	Tokens	%	Tokens	%
Corpus	59,183	63%	33,526	36%	93,235	99 ⁷ %
Core corpus	28,596	59%	19,446	40%	48,467	52 ⁸ %
Sample corpus	1,130	56%	895	44%	2,025	4.1% ⁹
C-S corpus	4,407	63%	2,483	36%	6,998	14.2% ¹⁰

Table1. Distribution of languages in the corpora

The first row of Table 1 lists the total size of the LIDES transcribed corpus to date: 93,235 words. German is more heavily represented than English in the overall corpus, as it is in all other corpora this study is based on. The distribution of word tokens from each language in the total and the core corpora is highly significantly ($p < 0.005$). This supports the argument proposed in 6.1 that these two corpora should not be compared, but is also a consequence of the large sample size¹¹. The main reason, however, is qualitative and was given in Section 6.1 and endnote 2 of this chapter.

The data in Table 1, furthermore, support the idea that the sample corpus is representative of the core corpus. It shows, firstly, that the sample corpus is more than twice the size of what Biber (1998) identified as sufficient for relatively stable counts of grammatical features. Secondly, German and English are roughly evenly represented in

the core and in the sample corpus¹². The sample corpus can therefore be used as a baseline for comparison.

The most interesting result of the language frequency data presented in Table 1, however, relates to the comparison between the core and the code-switched corpus. All core group members spend most of their time in settings where Emigranto is used as a discourse mode, i.e. the AJR day-centre or each other's homes. As participant observer in both places I gained the impression that they mix a lot, both inter- and intra-sententially. I therefore assumed the null hypothesis for the distribution of languages in the core and in the code-mixed corpus. That is, I assumed to find roughly the same proportion of word tokens from each language in the speakers' intra-sententially mixed utterances (i.e. in the code-mixed corpus) as in their overall speech (i.e. the core corpus). A chi-square test performed on the relevant figures shows that the distribution of German and English in these corpora is significant ($X^2 = 65.8$; $df = 1$; $p < 0.005$). The difference, however, is hardly large, i.e. the proportion of German and English is roughly 60 : 40 in the core corpus and 63 : 36 in the code-mixed utterances. The distribution of word tokens from each language may be interpreted as a first vague indicator that German does play a more prominent role in mixed utterances than English, at least for some speakers.

6.2.2. Distribution of languages by speakers

In this section I will look at the distribution of German and English in the speech of the individual informants. Given that all of them have been living in the United Kingdom for more than half a century and belong not only to the same speech community, but also to the same close-knit network, it seemed plausible to assume the null hypothesis. That is, the core group of informants uses roughly the same proportion of German and English in their speech. Before I present the figures, a few comments on Table 2 first.

Table 2 presents the raw numbers and percentages of words that could and could NOT be assigned to either German or English in the core and code-mixed corpora for the individual speakers. I included the "undecided" category, i.e. the homophonous diamorphs, because this column beautifully illustrates that all speakers use more of them in their code-switched utterances than in their monolingual ones. In other words, the percentage of "undecided" word tokens is higher in the code-switched than in the core corpus for every speaker. This finding supports the suggestion first proposed by Clyne (1987) and Muysken (1987) and subsequently taken up by Treffers-Daller (1994) that homophonous words serve as triggers for language changes. Diamorphs, like cognates,

“belong” to both languages and as such may be used as strategies to facilitate code-mixing. The larger numbers of “undecided” word tokens in the mixed utterances of all speakers in comparison with the core corpus lends support to this analysis. This analysis is furthermore supported by the significantly ($p = 0.001$) larger number of cognates in the code-mixed corpus in comparison with the core corpus, and the frequency of editing phenomena in mixed utterances (see Table 58). Muysken (2000), furthermore, associates diamorphs with congruent lexicalization, a process of mixing that suggests itself for the language pair and bilingual setting under investigation in this study (see Chapter 4).

Table 2 furthermore includes the researcher as a speaker. When presentations of results include the researcher, the figures relating to her are meant to function as a comparison (or control) to the linguistic behaviour of the subjects. Table 2 clearly illustrates that the researcher has not been using a bilingual mode of interaction for anywhere near the amount of time as the informants. For example, the amount of German and English she uses in the core and code-mixed corpora is significantly different (I will present p-values and discuss this difference in more detail once the figures have been presented). Note, furthermore that the researcher and *DOR appear on one more file than the other informants (lbron.cha). This explains the higher total number of word tokens from these two speakers.

	German		English		undecided		Total
	tokens	Percent	Tokens	Percent	Tokens	Percent	Tokens
*DOR							
Core	11,331	80%	2,615	19%	102	0.7%	14,049
c-s	1,928	72%	719	27%	44	1.6%	2,691
*MEL							
Core	3,451	50%	3,407	48%	89	1.3%	6,947
c-s	794	50%	739	47%	28	1.7%	1,561
*LIL							
Core	3,069	61%	1,845	37%	85	1.6%	4,999
c-s	476	65%	244	33%	13	1.7%	733
*TRU							
Core	6,564	56%	4,984	43%	90	0.7%	11,639
c-s	881	60%	568	39%	19	1.3%	1,469
*EVA							
Core	4,159	49%	4,353	51%	54	0.6%	8,566
c-s	396	63%	227	36%	8	1.3%	631

Table 2. Distribution of languages in the core and code-mixed corpora by speaker

A look at Table 2 immediately shows us that the distribution of languages varies considerably among the core informants. *MEL is quite balanced in the number of word

tokens she selects from both her languages. *TRU, *LIL and *DOR, on the other hand, are increasingly more German dominant. Interestingly enough this correlates exactly with the age at which they arrived in the United Kingdom. The age of onset of English as an L2 is 15 for *MEL, 19 for *TRU and 20 for *LIL and *DOR. The age at which my informants started using English on an everyday basis may thus still be ONE factor influencing the distribution of languages in their bilingual production.

When we focus on the distribution of the two languages in the core and code-mixed corpora, the overall conclusion we can draw from Table 2 is the same as for Table 1. There is a significant difference in the use of German and English by the informants in the inter- (but barely intra-) sententially mixed core corpus and the code-switched corpus. Because we can make CLAN frequency counts speaker-specific (with the +t*XXX option), we can identify which informants are predominantly responsible for this result. They are speakers *DOR and *EVA. For speaker *MEL the differences between the observed and expected numbers of word tokens from each language in mixed and “monolingual” Emigranto utterances is not significant. For speaker *LIL it is significant but not highly significant, and the significance increases as we move to speakers *TRU, *DOR and *EVA¹³. In other words, the proportion of English and German words *LIL, *TRU, *DOR and *EVA use in mixed utterances is significantly different from the amount of German and English words they use in their overall speech. We therefore have to reject the null hypothesis because of all speakers apart from *MEL, but mainly because of speakers *DOR and *EVA.

A comparison of the percentages in Table 2 shows that *DOR uses 8% more English words in mixed utterances than she does in her overall speech. *MEL also uses slightly more (1%) English in mixed utterances, whereas *LIL and *TRU both use approximately 4% less English in mixed utterances than they do in their overall speech production. The first indicator that *EVA is not a speaker of Emigranto is that she uses 15% less English in her mixed utterances than she does in the core corpus. This is by far the biggest discrepancy between the use of each language in inter- and intra- sententially mixed utterances of all speakers. We can conclude that the researcher stands out.

6.2.3. Frequency of mixed utterances

Now that we have familiarised ourselves with the overall propositions of German and English in the different corpora and among individual speakers, we can focus on code-mixing. I first address the question of how frequent monolingual German,

monolingual English and mixed utterances are in the core corpus. The results are presented in Table 3.

	Mono G	Mono E	mixed	Intelligible
Token	Approx. 4,496	approx. 3,153	952	8,615
%	52%	37%	11%	100%

Table 3. No and percentage of monolingual and mixed utterances

From Table 3 we see that the proportion of utterances in the core-corpus that are mixed is 11%, i.e. approximately every ninth utterance is mixed. Roughly every second is monolingual German and every third is English.

I examine the code-mixing behaviours of the individual informants next. Given the premises mentioned in the previous section, i.e. that all core-group members have been living in the United Kingdom for more than half a century and that they belong to the same close-knit network, the null hypothesis would seem plausible again. Given the results presented in the previous section, however, we may expect different results (see Table 4).

	No of utterances	No of mixed utterances	% of mixed utter.	% of all mixed utterances
*DOR	3,380	339	10%	36%
*MEL	1452	221	15%	23%
*LIL	950	104	10%	11%
*TRU	2115	210	10%	22%
*EVA	1439	78	5%	8%
Total	8336	952	10%	100%

Table 4. Switch rate per speaker

This is the first result that supports the null hypothesis, i.e. the members of the core group of informants produce roughly the same number of mixed utterances. *MEL's utterances are a more likely to be mixed than *DOR, *LIL, and *TRU's, but the researcher produced considerably fewer mixed utterances than the informants. This is the second indication that *EVA's code-mixing behaviour is considerably different from that of the informants. Presented with the figures in Tables 2 and 4, readers would be able to identify *EVA as an out-group member of the network that uses code-mixing as a discourse mode.

6.2.4. Frequency of code-switches

The reasoning behind this section is: once we know

1. how many words are adjacent to same language words,
2. how many words are adjacent to different language words, and
3. how many utterance final words are German and English,

we can calculate the frequencies of code-switches. From there we can then calculate the probabilities underlying them; and on that basis we could predict the switch frequency in other utterances.

“Combo” searches that were considerably modified¹⁴ from the ones given in the CLAN manual eventually produced the answers to the three questions asked above. The figures are presented in Table 5.

	German	English
Total no. of words	28,596	19,446
No. of words followed by same language word	22,706	15,504
No. of words followed by other language word	(^626) 813	(^414) 543
No. of utterance final words	5,007	3,399
Percent	97%	97%

Table 5. Adjacent same language words

The conclusion we can draw from Table 5 is that 97% of both German and English words are adjacent to same language words. This means that 3% of words must be adjacent to other language words. From these frequency data we might predict that approximately every 33rd word in other utterances by the same speakers would be switched.

I turn to the number of code-switches next. The results of the CLAN¹⁵ search for German words followed by English words and vice versa are given in Table 6.

No of code-switches	CLAN count		Total
	German > English	English > German	
Total	813	543	1,356

Table 6. CLAN counts of code-switches in core corpus

The results presented in Table 6 show that switching in my corpus is asymmetrical, i.e. there are more switches from German to English than vice versa. I checked this result with a manual count and then produced a conservative count¹⁶ and arrived at a total of 1,274 switches. I will use the conservative count as a basis for all further calculations.

I double-checked this result by calculating the switch frequency, i.e. the average number of words between switches, by speakers. The results are presented in Table 7.

	No of words	No of utterances	C-Ss points	Switch frequency
*DOR	14,049	3,380	448	24
*MEL	6,947	1,452	263	21
*LIL	4,999	950	138	29
*TRU	11,639	2,115	265	36
*EVA	8,566	1,439	105	68
Total	48,467	8,336	1,219	33

Table 7. Switch frequency¹⁷ by speaker in core corpus

The numbers presented in Tables 5 and 7 are based on different calculations; the results presented in Table 7 confirm the earlier finding that the switch frequency is once every 33 words, or 3%. This shows that it is possible to calculate the switch rate in LIDES (language) tagged corpora (and with the necessary CLAN analysis programs). If we exclude the researcher from these calculations, the average switch frequency is approximately every thirtieth word, or 2.9%¹⁸. The researcher thus brings the switch frequency down, i.e. she switches less than the core group of informants.

On the basis of Table 7 we have to conclude that the overall switch frequencies between individual speakers are significantly different. They are, no matter whether we include or exclude the researcher (see Footnote 19). We thus once again have to reject the null hypothesis and conclude that, despite identical number of years of exposure to English and membership in the same network, the overall mixing behavior of my core informants is individualistic. Despite this statistically significant difference in overall switch-frequencies, my informants' bilingual speech still shows important similarities, e.g. in the percentage of mixed utterances. And if we want to determine in-and out- group membership, the language frequency data presented so far all clearly identify the researcher as the speaker who does not use Emigranto as a discourse mode.

I have successively narrowed the investigation down from a global to a much narrower picture and will be looking at switch frequency in mixed utterances next.

	No of words in mixed utter.	No of mixed utterances	No of code-switch points	Switch frequency
*DOR	2,691	339	448	5.3
*MEL	1,561	221	263	5.1
*LIL	773	104	138	4.8
*TRU	1,469	210	265	4.8
*EVA	631	78	105	5.3
Total ¹⁹	7,125	952	1,219	5

Table 8. Switch rate by speaker in code-mixed utterances

The average switch frequency in the code-switched corpus is 5.0. This result confirms my impression that when²⁰ my informants switch within an utterance, they switch several times and thus produce patterns that are unlike insertion and more akin to alternation and lexical insertion.

Finally, I wanted to know whether the switch frequency in mixed utterances is significantly different between my informants. Given that their overall switch frequency is significantly different, the result is somewhat surprising. The switch frequency in mixed utterances is not significantly different ($X^2 = 1.74$; $df = 4$; $p > 0.5$). This is the second result that supports the null hypothesis. Members of the core group of informants thus produce

- roughly the same number of mixed utterances, and.
- the intra-sentential mixing of my informants is not significantly different.

These results mean that the significant difference in the overall switch frequency between my informants must be due to inter-sentential switches (and the different mixing patterns of speakers *DOR and *EVA). These two results are furthermore conducive to the following analysis because they confirm that the data chosen as the main body of texts for it are very similar (see Section 6.1); and, within these texts, it is the intra-sententially mixed utterances, i.e. the main focus of this study, that are most similar.

6.3. Quantitative analysis of grammatical relations²¹

Before I proceed with the grammatical analysis, I need to state how the relation between UTTERANCES and SENTENCES was handled in this study. I stated in Chapter 5 that Word Grammar, unlike many other syntactic theories, recognises utterances. In Chapter 6 I have so far only talked about utterances, i.e. units of conversational structure. From the examples quoted so far, it is obvious that the audio data were transcribed according to

the CHAT and LIDES guidelines, that is, including filled and silent pauses, repeats, false starts, overlaps and other features of conversational speech. For the grammatical analysis I assumed that conversational speech consists of the instantiation of linguistic units, i.e. sentences. A sentence can be defined as any string of words which are held together by syntactic relationships. In other words, every conversational utterance was taken to be a token of a particular type of linguistic unit, the structural features of that unit being defined by the grammatical rules of either German or English. I did not modify the transcribed speech before the grammatical analysis so that the utterances take on the appearance of sentences. That is, I did not edit the sample and code-mixed corpora (unlike many of the quoted examples). I left any material that could not be taken as a token of a word-form of either German or English in the texts, but if it could not be linked to other elements in the utterance via a relationship of dependency, it was not included in the syntactic analysis. That is, all the words in a transcribed utterance that are related to other words by syntactic relationships constitute the sentences on which the following grammatical analysis is based.

6.3.1. Distribution of languages in grammatical relations

I will start the analysis of grammatical relation by looking at frequency distributions of monolingual and mixed dependencies in the sample and code-mixed corpus. Given that approximately 56% of the word tokens in the sample corpus are German and 44% English (see Table 1), the distribution of monolingual German and English dependency relations ought to be similar too.

	German	English	Total
Monoling. Dependencies	754	596	1350
Percentage	55%	44%	100%

Table 9. Monolingual dependency relations in the sample corpus

Table 9 shows that this assumption is correct; that is, the proportion of words and dependencies from each language is similar. The finding that the sample corpus contains one per cent fewer monolingual dependencies than words per language is due to the mixed dependencies having been taken out. In other words, one per cent of the dependency relations in the sample corpus are mixed.

Given that 55% of the monolingual dependencies in the sample corpus are German and 44% are English, the distribution of heads from each language in the monolingual corpus must be identical. The same assumption, however, cannot be made for mixed

dependencies, as in mixed dependencies German and English words, in theory, have a 50% chance of being heads or dependents. For mixed dependencies the fact that 63% of the words in the code-mixed corpus are German and 36% English may be more relevant. Table 10 illustrates that this is tentatively right.

	Head _G – dependent _E	Head _E – dependent _G	Total
Mixed dependencies	525	165	690
Mixed dependencies	76%	24%	100%

Table 10. Mixed dependency relations in the code-switched corpus

In mixed utterances, however, the number of heads per language is even more skewed towards German than the number of words per language, i.e. there are approximately three times (3.2) more mixed dependencies with a German head than mixed dependencies with an English one. A significantly higher proportion of heads in code-mixed utterances is German than English. This finding once again points in the direction that German seems to function as a default or base language in mixed utterances, but not as absolutely as the models that are based on the assumption of a matrix language claim (see Chapter 4).

6.3.2. Dependency distance

In Section 6.3.1 we discovered that German is not only numerically dominant in the speech of my informants, but also contributes a significantly higher proportion of word tokens (see also Table 1) and heads (cf. Table 10) to code-mixed utterances than English. If we assume that heads play a more prominent role in syntactic relations than dependents, then German syntax should have more influence over code-mixing patterns than English²².

In syntax, however, there are many relationships that are not dependencies - for example there is word order. One of the hotly debated issues in the code-mixing literature is the potential role played by syntactic relations, on the one hand, and word order immediately adjacent to and on both sides of potential switch point, on the other hand (see Chapter 4). Muysken (2000: 61), for example, formulates the

Adjacency Principle

If in a code-mixed sentence two adjacent elements are drawn from the same language, an analysis is preferred in which at some level of representation (syntax, processing) these elements also form a unit.

Muysken (2000: 62) does not expect the Adjacency Principle to hold absolutely, but he uses it as an evaluation measure for analyses and assumes that it presupposes insertion.

In the following section I will be addressing the issue of adjacency and syntactic relations by utilising a Word Grammar notion that may shed light on this matter. This notion is DISTANCE. The dependency distance of a word is the number of words between it and its head/parent. Two words that are linked by a dependency relation and are also adjacent have a distance of 0. I will therefore call them direct dependencies. Syntactically related words that are NOT adjacent have a dependency distance of ≥ 1 . These relations will be called indirect dependencies. The WG notion of distance seems to have theoretical, methodological and psychological advantages over the Adjacency Principle. In the WG notion of distance

- The two adjacent elements mentioned in the formulation of the Adjacency Principle are clearly defined as words or word-forms
- The levels of representation are unequivocally syntax, morphology and processing
- The only analysis possible (rather than preferred) is a syntactic dependency one
- The unit formed by the two adjacent elements is a syntactic dependency relation
- The effects of distance have been shown to be psychologically real²³

Apart from the adjacency vs. syntactic relations issue, the exploration of dependency distance may furthermore shed light on whether code-mixing increases processing load or not (Grosjean & Soares 1986, Grosjean 1995). Hudson (1999) found that the greater the distance, the greater the processing load, because the earlier word has to be maintained in working memory until the later word is processed.

The hypothesis behind the next set of data is that the mean distance between two syntactically related German words ought to be longer than the mean distance between two related English words. For English we know that most words that are syntactically related are also adjacent, i.e. they have a distance of 0 (Hudson, personal communication). The two main reasons why I assume German to have a longer mean distance are, firstly, the discontinuity between AUX/MOD and main verbs in German (i.e. the *Verbalklammer*)²⁴ and, secondly, the different word orders in German main and subordinate clauses. The results presented in Table 11 suggest that this assumption is correct.

For mixed dependencies the main point of interest will be whether greater distance increases the chances of code-mixing. If code-switching did cause extra processing load (even in bilingual speech mode), we might, firstly, expect shorter distances in mixed dependencies because they try to counteract the additional processing load mixed utterances may pose for listeners. Secondly, we could assume that, because they are mixed, their distance is somewhere between the mean distances for German and English monolingual dependencies. If it was exactly the mean, it ought to be 0.68 (Table 11). Thirdly, we would expect longer mixed dependency distances, if we assume that the influence of a word's language on that of its dependent will decrease with increased distance. In other words, the longer the distance, the more likely we are to encounter an other-language dependent, i.e. a code-switch.

For mixed dependency relations I am going to work on the hypothesis that the distance of mixed dependencies with a German head should be longer than the distance of mixed dependencies with an English head. This assumption is based on the fact that German dependencies are longer than English ones (see Table 11), and the assumption that heads influence distance more than dependents. The main factor increasing distance is a change in dependency direction, i.e. a combination of post- and pre-dependents (Hudson, personal communication). A change in dependency direction should be more frequent in mixed dependency relations with a German head, because of the placement of verbs (which are of course main heads) discussed earlier. Table 11 presents the mean distances in monolingual and mixed dependencies.

	German mean	English mean	Average
Monolingual	0.87 ($\sigma = 0.78$)	0.49 ($\sigma = 0.41$)	0.68
Mixed with head	0.85 ($\sigma = 0.81$)	1.26 ($\sigma = 1.08$)	1.06

Table 11. Mean distances (and σ) in monolingual and mixed dependencies

Table 11 shows that

1. monolingual German dependencies are **longer** than English ones. This supports the assumptions made on the basis of the word order properties of the two languages;
2. the mean distance of all mixed dependencies (1.06) is **longer** than those of both English and German monolingual dependencies. This finding supports the third possibility outlined above, i.e. that more distant words may have less influence on each other's language, and that greater distance seems to increase the chances of

code-mixing. This result may furthermore support the importance of peripherality as a factor favouring code-mixing (Treffers-Daller 1994).

3. the mean distance of mixed dependencies with a German head is marginally **shorter** than the mean distance of monolingual German dependencies. Because the difference is so minimal, this finding cannot be used as evidence that mixed dependencies with a German head counter-balance a possibly greater processing load for mixed utterances with a shorter dependency distance. This finding may furthermore indicate that the word class that is assumed to cause greater dependency distance, i.e. German verbs, is infrequently involved in mixed dependencies²⁵.
4. the mean distance of mixed dependencies with an English head is much **longer** than the mean distance of monolingual English dependencies. This finding could mean that more distant words have less influence on each other's language. In other words, mixed dependencies with an English head are the result of distance, i.e. speakers "forget" that the head was English. This fourth finding may furthermore point towards English words predominantly entering dependency relations that are characterised by long distances, e.g. adjunct, extractee and extraposee relations.
5. the mean distance in mixed dependencies with a German head is approximately two thirds of the mean distance of mixed dependencies with an English head. This last finding completely contradicts the assumption that mixed dependencies with German heads are longer than mixed dependencies with English heads. This hypothesis was based on word order properties of the two monolingual grammars.
6. the difference in mean distances between monolingual and mixed dependencies is highly significant ($X^2 = 18.6$, $df = 1$, $p < 0.001$); and the standard deviation from the mean is higher for mixed dependencies. In other words, there is more variation in the distances of mixed dependencies and there are presumably more mixed outliers.

The third, fourth and fifth findings together may suggest that the syntactic relations German heads enter with English dependents are not very different to the ones they enter with same language dependents, at least as far as distance is concerned. English heads, on the other hand, may enter into "looser" and – literally – more remote (e.g. adjunct) syntactic relations with German dependents. To take this hypothesis a step further, we may assume that English words function more frequently as heads of syntactic material that is located at the clause periphery.

I explore the relationship between distance and syntactic dependency further by

- looking at monolingual dependencies first, then

- comparing monolingual dependencies with mixed ones, before I
- compare mixed dependencies.

The analysis of the sample code-mixed corpus allows us to separate out direct and indirect dependencies. The numbers for monolingual dependency relations are presented in Table 12. Since they tell us a lot about distance in monolingual German and English, I will present and discuss both the column and the row percentages.

	German	English	Total
Distance = 0	490	463	953
Distance ≥ 1	264	133	397
Total	754	596	1350

Table 12. Number of monolingual dependencies (sample corpus)

	German	English
Distance = 0	65%	78%
Distance ≥ 1	35%	22%
	100%	100%

Table 13. Percentage of German and English direct & indirect dependencies

	German	English	Total
Distance = 0	46%	54%	100%
Distance ≥ 1	61%	39%	100%

Table 14²⁶. Percentage of direct and indirect German & English dependencies

Tables 12 and 13 confirm that most English words that are syntactically related are also adjacent (Hudson, personal communication). These two tables furthermore illustrate that English has more direct dependency relations, whereas German has more indirect long(er)-distance dependencies. This result is in line with the assumptions based on syntactic properties of German and English, and the mean dependency distances for the two languages (Table 11).

The comparison between the percentages in Tables 13 and 14 is interesting because it reveals that the difference between German and English dependencies lies less in the direct, than in the longer distance dependencies. This actually fits the picture one expects from the grammatical properties of the two languages. English is predominantly head first and therefore has relatively few changes in dependency direction. German, on the other hand, has more frequent changes in dependency direction (because of the Verbalklammer and V2 vs. Vf) which entail longer distances.

The next section presents an overall comparison between monolingual and mixed dependencies in relation to distance.

	Monolingual	Mixed	Total
Distance = 0	953	445	1398
Distance ≥ 1	397	245	642
Total	1350	690	2040

Table 15. Number of monolingual and mixed dependencies

	Monolingual	Mixed
Distance = 0	71%	64%
Distance ≥ 1	29%	36%
	100%	100%

Table 16. Percentages of monolingual and mixed direct and indirect dependencies

	Monolingual	Mixed	Total
Distance = 0	68%	32%	100%
Distance ≥ 1	62%	38%	100%

Table 17. Percentages of direct and indirect monolingual and mixed dependencies

The most basic question we need to ask is whether two syntactically related words are more likely to be in the same language if they are also adjacent. Table 16 answers this question in the affirmative as it shows that more monolingual dependencies are direct than mixed ones. Table 17, the row percentages, illustrates the flip side of the coin, i.e. out of all direct dependencies, more are monolingual than mixed. The difference between monolingual and mixed direct and indirect dependencies is highly significant ($X^2 = 7.88$; $df = 1$; $p = 0.005$). In other words, with regard to distance, mixed dependency relations are unlike monolingual ones. We can therefore tentatively assume that words that are linked by direct syntactic relations are more likely to be in the same language. These results support the assumption that greater distance increases the chances of code-mixing.

The comparison between monolingual German dependencies and mixed dependencies with a German head is presented in the next set of tables.

	Monolingual German	Mixed with head _G	Total
Distance = 0	490	355	845
Distance ≥ 1	264	170	434
	754	525	1279

Table 18. Number of monolingual German and mixed dependencies with a G head

	Monolingual German	Mixed with head _G
Distance = 0	65%	68%
Distance ≥ 1	35%	32%
	100%	100%

Table 19. Percentages of monolingual German and mixed dependencies with head_G

Table 19 shows that dependencies with a German head are roughly as likely to be direct when they are mixed as they are when they are monolingual. More precisely, German heads even have more adjacent English dependents than German ones. A Chi-square test performed on the figures in Table 18 confirms that the difference between direct monolingual German dependencies and direct mixed dependencies with a German head is not significant ($X^2 = 0.96$; $df = 1$; $p = 0.32$). This means that, as far as distance is concerned, German heads behave very similarly, no matter whether they enter monolingual or mixed dependency relations.

I repeat the same comparison for monolingual English dependencies and mixed dependencies with an English head (Tables 20 and 21).

	Monolingual English	Mixed with head _E	Total
Distance = 0	463	90	553
Distance ≥ 1	133	75	208
Total	596	165	761

Table 20. Number of monolingual English and mixed dependencies with an E head

	Monolingual English	Mixed with head _E
Distance = 0	78%	55%
Distance ≥ 1	22%	45%
	100%	100%

Table 21. Percentage of monolingual English and mixed dependencies with head_E

The first column in Table 21 again shows that the vast majority of monolingual English dependencies are direct. The comparison with mixed dependencies shows that the difference between direct monolingual English dependencies and direct mixed dependencies with a English head is highly significant ($X^2 = 34.8$; $df = 1$; $p < 0.001$). English heads behave differently in mixed dependencies than in monolingual ones. More of their German dependents are separated from them by at least one other word. This may indicate that they have less influence on the language of their dependent than German heads.

Mixed dependencies are discussed next. The raw figures are presented in Table 22, the column percentages in Table 23, and the row percentages in Table 24.

	Head _G – dependent _E	Head _E – dependent _G	Total
Distance = 0	355	90	445
Distance ≥ 1	170	75	245
Total	525	165	690

Table 22. No of mixed dependencies

	Head _G – dependent _E	Head _E – dependent _G
Distance = 0	68%	56%
Distance ≥ 1	32%	44%
	100%	100%

Table 23. Percentages of mixed dependencies

	Head _G – dependent _E	Head _E – dependent _G	Total
Distance = 0	55%	45%	100%
Distance ≥ 1	45%	55%	100%

Table 24²⁷. Percentages of mixed dependencies

For mixed dependencies the null hypothesis would state that there is no association between the language of the head and dependency distance. I, however, did not assume the null hypothesis in this case, but expected more direct dependencies with English heads. The assumption is based on the syntactic properties of the language of the head and the findings for monolingual dependencies (Tables 12 – 14). A Chi-square test performed on the figures presented in Table 22 reveals that there is clearly an association between the language of the head and distance in mixed dependencies ($X^2 = 9.37$; $df = 1$; $p = 0.002$), and that there is strong evidence against the null hypothesis. In other words, the language of the head influences whether its other language dependent is immediately adjacent or not. Tables 23 and 24 reveal in which direction the influence goes.

Table 23 shows that German heads have more direct other-language dependents than English heads, and Table 24 illustrates that out of all direct mixed dependencies, more have a German head word than an English one. This is the reverse of what we found for monolingual dependencies and suggests that I should not have based assumptions about distance in mixed dependencies on word order properties of the two languages and the findings for monolingual dependency relations.

If we now compare Tables 13 and 23, i.e. the distribution of direct and indirect dependencies per language (of the head), we see where I went wrong.

	German	$h_G - \text{dep}_E$	English	$h_E - \text{dep}_G$
Distance = 0	65%	68%	78%	56%
Distance ≥ 1	35%	32%	22%	44%
Total	100%	100%	100%	100%

Table 25. Comparison of monolingual and mixed dependencies

Table 25 illustrates that the percentages of monolingual German and mixed dependencies with a German head are very similar for both direct and indirect dependencies. The percentages for monolingual English dependencies and mixed dependencies with an English head, however, differ considerably. They differ in the way we already know from related previous results. That is, there are considerably fewer direct mixed dependencies with an English head than monolingual English ones.

A comparison of Tables 14 and 24 (Table 26), i.e. the row percentages, shows that the proportions of direct mixed dependencies are directly reversed in comparison with direct monolingual dependencies.

	German	$h_G - \text{dep}_E$	English	$h_E - \text{dep}_G$
Distance = 0	46%	55%	54%	45%
Distance ≥ 1	61%	45%	39%	55%

Table 26 Comparison of direct and indirect dependencies

The findings from Table 25 show that, with regard to distance, German heads behave similarly in monolingual and mixed dependencies, but in comparison with English heads (Table 26), they decrease the distance in mixed dependencies. These findings are also in line with evidence presented in Table 11 (mean distances in monolingual and mixed dependencies).

We can thus conclude that, at least as far as distance from their dependent is concerned, German heads seem to behave very similarly in monolingual and mixed dependency relations. English heads, on the other hand, are frequently adjacent to other English words that depend on them, but keep a greater distance from their German dependents. These preliminary findings may indicate that German is the default language in Emigranto, which occurs where the influence of an English head is small because of distance.

To summarise this section, we can say that the difference between direct monolingual and direct mixed dependencies is highly significant ($p = 0.005$). Since the differences in

1. mean distance between monolingual and mixed dependencies, and
2. the difference between monolingual direct dependencies and mixed direct dependencies

are relevant, two syntactically related words are more likely to be in the same language if they are adjacent than if they are separated. But this effect seems to be predominantly due to English heads; distance seems to have less effect if the head is German. This is direct evidence for distance having an effect on code-switching but only indirect evidence for syntactic relations having an effect. That is, if the influence of dependency is affected by distance, then (a fortiori) dependency must have an effect.

Out of the findings presented in this section the difference between German and English heads is particularly interesting. But it poses the question of why distance should be relevant to code-switching when the head is English, but not if it is German. One possible interpretation is this:

- a) German words have no influence at all on the code of their dependents, as such. Any word is more likely to be German than English, and therefore a German word is more likely to be followed by another German word; but this effect is due simply to adjacency, not to dependency.
- b) English words do influence the code of their dependents, so we get an effect of distance – the influence reduces as distance increases. Maybe they also have a pure adjacency effect, like German words, but we would need more figures to decide that – figures which allow us to separate the effects of adjacency from those of dependency.

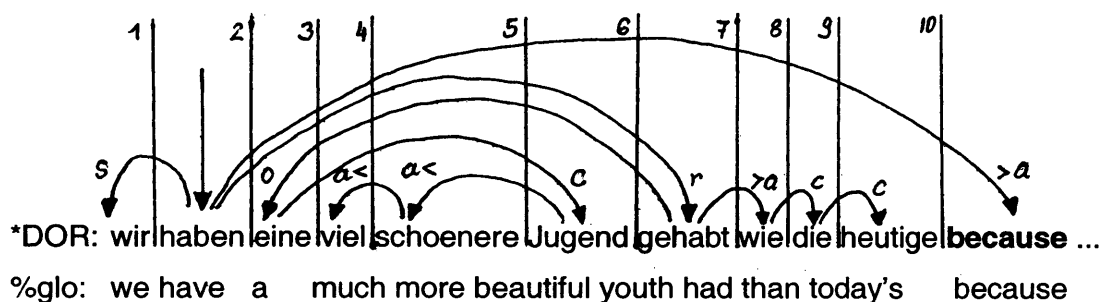
This is what I will try to do in the next sections.

6.3.3. Exploring other options

Most researchers working in the area of code-mixing must - secretly - have asked themselves whether syntactic relations have an effect on code-mixing at all, or whether the patterns documented are all due to adjacency. As stated at the beginning of the previous section, one aim of looking at dependency distance was to separate the effects of adjacency from those of syntactic dependency. Although the results presented in Section 6.3.2 are interesting, and provide us with a view of monolingual and code-mixed speech that has - to my knowledge - not been provided before, it is not entirely clear whether the questions asked were the right ones to find out if syntax has an impact on

code-mixing²⁸. I therefore designed a consistent coding scheme that captures both syntactic relations and adjacency. It was only applied to the sample code-mixed corpus because it is quite labor-intensive.

As stated in Section 6.1, the code-mixed sample corpus is analysed according to language of adjacent words (e.g. $w_G \wedge w_E$), direct (distance = 0) or indirect (distance ≥ 1) dependency, and directionality (pre- or post-) of the dependency relation. I will illustrate the coding scheme on line 859 from *lbron.cha*.



There are ten potential switch points in this eleven-word utterance fragment. I coded the language of the words at either side of the potential switch point and the dependency relations crossing the switch points in the following way. The first two words, *wir haben* were coded as a **German word immediately followed** by another **German word** ($w_G \wedge w_G$). The two words are furthermore linked by a **direct** (distance = 0) **pre-dependency** relation, which happens to be a subject relation. They were therefore tallied in column 3 row A of Table 28 below. *Haben* and *eine* are adjacent German words ($w_G \wedge w_G$) again, but are not linked by a dependency relation. At this point I tallied the shortest (distance = 4) post-dependency relation *haben* is involved in, i.e. the raiser relation with *gehabt* in column 2 row A, and so on for the remaining potential switch points. I will just give one more example in which the two words at either side of the switch point are from different languages. The last potential switch point is tallied in column 2 row 2 because a German word is immediately followed by an English word ($w_G \wedge w_E$) and *because* an indirect (distance = 8) post-adjunct of *haben*.

If one sticks to the following three rules

1. code the dependency relation with the shortest distance first, and
2. code post-dependents as early as possible, and
3. pre-dependents as late as possible,

all adjacency pairs and syntactic relations can be coded without repeating any information. Applying this procedure to the 500 word sample code-switched corpus, I arrived at the results recorded in Table 28.

	Direct post-d 1	indirect post-d 2	Direct pre- 3	Indirect pre-d 4	no 5	Total
A $w_G \wedge w_G$	86	57	77	20	35	275
B $w_G \wedge w_E$	19	17	3	7	12	58
C $w_E \wedge w_E$	67	16	31	3	13	130
D $w_E \wedge w_G$	6	10	10	5	15	46
	178	100	121	35	75	509

Table 28. The relation between adjacency and dependency

The numbers from Table 28 were then combined in different ways to address the following research questions.

6.3.3.1. Adjacency (re-visited)

The results gathered in Section 6.3.2 only provided us with indirect evidence for the effects of dependency: if syntactic relations are affected by distance, then (a fortiori) dependency must have an effect. I therefore addressed the question of dependency and adjacency again within this framework. The first research question I re-visited was: are adjacent words more likely to be in the same language if they are connected by a direct dependency than if they are not? To answer this question, the figures from the direct and indirect dependencies, and same and different language adjacency pairs, were combined in the following contingency Table 29.

	direct dependents	indirect dependents
$w_X \wedge w_X$	261	96
$w_X \wedge w_Y$	38	39

Table 29. Dependency and adjacency

These results now clearly show us that adjacent words are significantly ($X^2 = 16.7$; $df = 1$; $p < 0.001$) more likely to be in the same language if they are also connected by a direct dependency. In other words, two syntactically related adjacent words are significantly more likely to be in the same language than in different languages. This finding thus refutes the null hypothesis, which says that there is a chance relation between dependency and language choice, and we can therefore conclude that syntax does affect code-switching. This argument can be strengthened further ($X^2 = 26.6$, $df = 1$) by adding the no-dependency figures to the indirect dependencies (which is justified because they are even less linked than the indirect dependencies).

6.3.3.2. Language of the head (re-visited)

In Section 6.3.2 we found that the language of the head seems to have an effect in mixed dependencies. I therefore tested the influence of the language of heads again on the code-mixed sample corpus.

I first tested all (monolingual and mixed) dependencies on whether the language of the head has any influence on direct adjacency.

	h_G	h_E
Direct dependencies	192	107
Indirect dependencies	99	36

Table 30. Language of the head & direct vs. indirect dependencies, all dependencies

We found in Section 6.3.2 that more monolingual English dependencies are direct than German ones, but that more mixed dependencies with an English head are indirect than ones with a German head. We would therefore expect that these effects cancel each other out in an overall comparison; i.e. we would find evidence for the null hypothesis ($\chi^2 = 3.5$; $df = 1$; $p = 0.05$). In an overall comparison of monolingual and mixed dependencies, the language of the head therefore seems to have little influence on whether the dependency relation is direct or indirect.

If we ask the same question based on mixed dependencies only, we get a different picture, despite the small sample size.

	h_G	h_E
Direct dependencies	29	9
Indirect dependencies	21	17

Table 31. Language of the head & direct vs. indirect dependencies, mixed

This result supports the findings from the previous section that German heads are significantly ($p = 0.045$) more likely to enter direct mixed dependency relations than English heads.

The next question I addressed was: does the language of the head influence whether the dependency relation it enters is monolingual or mixed? As such, we can only ask this question for direct dependencies²⁹. Based on the results from the sample corpus (Section 6.3.2) I do not expect a significant difference in direct dependencies.

	h_G	h_E
$w_X \wedge w_X$	$1a + 3a = 86 + 77 = \mathbf{163}$	$1c + 3c = 67 + 31 = \mathbf{98}$
$w_X \wedge w_Y$	$1b + 3d = 19 + 10 = \mathbf{29}$	$1d + 3b = 6 + 3 = \mathbf{9}$

Table 32. Direct dependencies

The results confirm that this comparison is not significant ($X^2 = 2.77$; $df = 1$; $p = 0.096$). There are two possible interpretations of this result, both of which have already been considered in the conclusion to Section 6.3.2. The first possibility is that German words, which constitute the majority of heads in mixed dependencies, have no influence on the code of their direct dependents. The second possibility is that the language of the head only has an influence in **indirect** dependencies.

If we only include indirect dependencies in the comparison, we see that the second interpretation seems to be right.

	h_G	h_E
$w_X \wedge w_X$	$2a+4a = 57+20 = \mathbf{77}$	$2c+4c = 16+3 = \mathbf{19}$
$w_X \wedge w_Y$	$2b+4d = 17+5 = \mathbf{22}$	$2d+4b = 10+7 = \mathbf{17}$

Table 33. Indirect dependencies only

The comparison is highly significant ($X^2 = 8.03$, $df = 1$, $p = 0.005$). The language of the head does influence the effect of an **indirect** dependency: an English head has much less influence on the language of an adjacent indirect dependent than a German head.

6.3.3.3. Direction of dependency

From the syntactic properties of German and English we assumed that the direction of the dependency may have an impact on code switching. This is because in English most dependents are **post**-dependents. The main exceptions to this rule are, of course, subjects. In German, on the other hand, the utterance final word order position of verbs triggers a lot of, often very long, **pre**-dependency relations. I can only test the direction of the dependency relation against monolingual and mixed **direct** dependencies, as in indirect dependencies we do not know the language of the dependent from our coding scheme.

	Direct post-dependents	Direct pre-dependents
$w_X \wedge w_X$	153	108
$w_X \wedge w_Y$	25	13

Table 34. Direction of dependency

In direct dependencies the difference in dependency direction does not correlate significantly ($\chi^2 = 0.708$, $df = 1$, $p = 0.4$) with the language of the adjacent dependent.

The same test performed on mixed dependencies only yields a highly significant result ($p = 0.002$)

	Direct post-dependents	Direct pre-dependents
$W_G \wedge W_E$	19	3
$W_E \wedge W_G$	6	10

Table 35. Direction of mixed dependencies

Note, however, that the main thing Table 35 illustrates is that there are simply more German heads in mixed utterances. So, perhaps surprisingly, we have to conclude that direction does not matter, at least not in direct dependencies. In other words, the effect of a head word's language is the same whether it comes before the dependent or after it. The direction of the dependency may have an effect in indirect dependencies. This, however, cannot be tested on the basis of the sample code-mixed corpus.

6.3.3.4 Adjacency in monolingual and mixed utterances

In Section 6.2.4 we found that in the core corpus, i.e. in inter- but barely intra-sententially mixed Emigranto, the two languages behave very similarly when it comes to words being followed by a word of the same language, i.e. 97% of German and English words are followed by a same language word.

In the intra-sententially mixed sample corpus, both German and English words are naturally followed less frequently by same language words; the proportion, however, does not necessarily have to change. We find that in the sample code-mixed corpus the two languages behave quite differently. 83% German words are followed by another German word, whereas only 74% of English words are followed by another English word. This means that in intra-sententially mixed utterances a switch is more likely after an English word than after a German word³⁰.

The question is, whether this is related to the different dependency tendencies. That is, if direction and distance are relevant to switching (and both of them seem to be at least in mixed indirect dependencies), these structural differences will lead to differences in switching probability. But, based on the monolingual structure, at least one of these

predictions goes in the wrong direction. If W1 is English, it is more likely to be directly related to W2³¹, so W2 should be **more** likely to be same-language than if W1 is G³². This prediction is based on the properties and findings of the monolingual grammars.

However, if we look at the dependency distance (and direction) properties of mixed dependencies, the oxymoron disappears. Tables 25 and 26 show that English heads in mixed utterances behave very differently to English heads in monolingual utterances, at least in one respect, i.e. distance. Many of their German dependents are more than one word away from them. The results from the sample code-mixed corpus support this conclusion.

	$W_G \wedge W_G$	$W_G \wedge W_E$	$W_E \wedge W_E$	$W_E \wedge W_G$
Direct	68%	86%	84%	38%
Indirect	32%	14%	16%	62%

Table 36. Comparison of direct and indirect monolingual and mixed dependencies

In response to the original question, i.e. whether the structural differences between German and English in terms of dependency distance and direction will lead to differences in switching probability, we can thus conclude that the contradictory predictions based on the properties of the monolingual grammars do not hold for the mixed corpus, because the distance properties of mixed dependencies are different.

From Section 6.3. we can thus conclude that

- syntax does have an effect on code-switching.
- words that are linked by direct syntactic relations are more likely to be in the same language.
- distance increases the chances of code-mixing in dependencies with English heads

The other results also support the findings of Section 6.2, but we are still left with almost as many puzzles as at the beginning of Section 6.3.3.3. I try to resolve some of these open issues (e.g. Does the language of the head matter? Is the direction of the dependency important?) in the next section, i.e. the quantitative analysis of specific syntactic relations.

6.4. Quantitative analysis of grammatical functions

In this section I will be looking at the distribution of grammatical functions in the sample and code-mixed corpora. A grammatical function is a particular kind of dependency, that is, a relationship between a word and one of its dependents. In monolingual dependencies both word A and word B are from the same language. If words A and B are from different languages, we are looking at a mixed dependency. Each dependency relation is controlled by at least one rule that allows that particular pair of words to occur as dependent and head/parent. Dependency relationships are always based on syntactic rules.

Some syntactic rules of German and English are similar, others differ; and the requirements of German and English words involved in dependency relations may also differ. By looking at monolingual and mixed dependency relations we can find out where the two languages involved in bilingual production in this particular incident are similar and where they differ. And we can study where, i.e. in which dependency relations, the syntax of German and English allow mixing.

For this analysis it is important to remember that if word A depends on B, the dependent word B is “supported” by the one it depends on, its head/parent. B supports A, but B is not necessarily more important than A in terms of the information it provides. That is, dependents often carry more important information than their heads/parents. This is important in relation to the null hypothesis, i.e. that each word in a dependency must satisfy the constraints imposed on it by its own language.

In Sections 6.4 I present the analysis of the sample and code-mixed corpora in terms of grammatical functions.

6.4.1. Monolingual dependency relations³³

The sample corpus contains few mixed utterances. An analysis of it in terms of grammatical functions thus provides us with a picture of monolingual (Emigranto) German and English sentences. For the most important tables³⁴ I am going to separate functions from positions, giving one table for functions and another for left-/right-dependents.

Table 37 presents a comparison of the monolingual German and English grammatical functions in the sample corpus in raw numbers, ignoring the position of the dependent. Table 38 gives the row percentages for these figures; significant differences are in bold. Table 38 shows that there is no significant difference for most functions (complements, subjects, objects, extraposees, negatives and prepositionals/ particles³⁵). This is a good indicator that German and English are typologically similar languages. However, there is an odd difference in the number of adjuncts and sharers, with more adjuncts in German and more sharers in English. Possibly there is no syntactic explanation for the difference in **adjuncts**³⁶, only a psychological one: my informants modify more in their first language. The significant difference in **sharers** is even more baffling, especially the fact that there are more English sharers than Germans ones. The sharer pattern is found not only with auxiliary verbs, but also with copular verbs, transitive raising verbs and verbs of control. What all these verbs have in common is that their sharer defines a predicate, i.e. some general characteristic (e.g. tired, happy, winner, arrive, come) which is true of the person or thing referred to by the parent verb's subject or object. Why this semantic relationship should be more common in English than in German, at least in the speech of my informants, I do not know. Given that my corpus only contains spoken (and not written) German data, in which reference to the past is almost exclusively made with the perfect (*habe ... gesehen*) rather than the simple past (*sah*), I had expected more German sharers than English ones, but found the reverse. The significant difference in **extractees** is expected, given German's V2 structure. However, topicalization, that is extractions, are clearly stylistically marked in German and in English. A monolingual German example illustrating this change in word order would be

DOR: mit ihrem mann sind []³⁷ sie gekommen .

lbron.cha, line 1310

Table 39 presents a comparison between monolingual German and English dependency relations in the sample corpus in raw figures, separating out left- and right-dependents. Table 40 shows the same information in row percentages; significant differences are again in bold. These two tables highlight the main word order differences between the two languages spoken by my informants. Note, first of all, that four columns have a 0 entry for English; there are no pre-dependent sharer, object, negative and particle/prepositional relations in the monolingual English of my informants at all. All four of them are post-dependency relations of verbs in English, but pre-dependents in German when their heads are clause final verbs. This result shows that, when in monolingual English mode, my informants rigorously stick to English syntactic rules.

If we then focus on the other left- and right-dependents that show significant differences between German and English, we find significantly more **subjects** that are right-dependents of verbs in German than in English. This difference is again expected, given German's V2 structure. Constructions like the following, in which *die Engländer* is a right-dependent subject of *sein*, are quite frequent in (the) German (of my informants).

*LIL: da sind die Engländer viel g(e)scheiter .

Jen1.cha, line 2940

We furthermore notice significantly more German pre- (but not post-) **adjuncts** in the sample corpus than English ones. (The significant difference in the overall number of sharers and extractees has already been commented upon, and the differences for objects, negatives and particles/ prepositionals are only relevant because these functions do not occur as pre-dependents in English, see above). The difference in the number of pre-adjuncts between the two languages is partly due to German's V2 structure. In the following example the placement of *natürlich* as a pre-dependent of *ist* is clearly a stylistic device.

*DOR: so /natuerlich ist mein Englisch viel schlechter geworden4,, nicht ?

lbron.cha, line 1314

The generally freer word order of German may be another reason for the significantly higher number of German pre-adjuncts. Adverbials can be placed almost anywhere in German sentences.

Before I move on to the comparison between mean distances, I would briefly like to comment on **extraposees**, because they become relevant in later comparisons and the overall interpretation of the data. Grammatical extraposition, i.e. the shifting out of a "heavy" clause to a much later position at the end of a higher clause, is present in the sample corpus.

*TRU: ich hab(e) auch /die nicht gekannt [/] die, wo du sagst Fuerst [/] Trude Fuerst .

Jen1.cha, line 1655

Most of the ungrammatical monolingual German sentences in my corpus, however, involve ungrammatical extraposition of direct objects³⁸. Two examples from the sample corpus are

MEL: hab(e)4 ich4 mir4 genommen4 ein4 taxi4 [] .

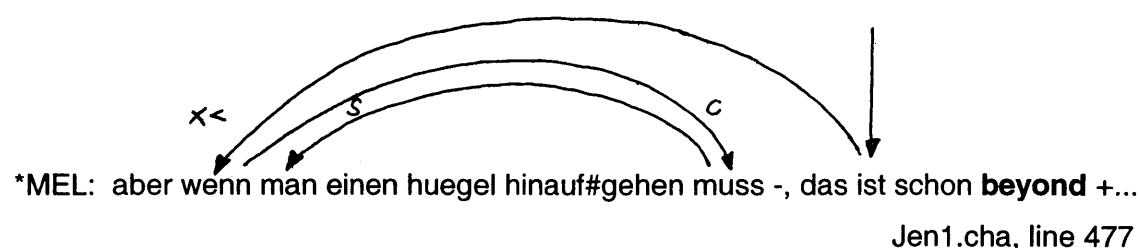
Jen1.cha, line 463

MEL: 00es hat mich gekostet zwei pfund zwanzig [] .

Jen1.cha, line 465

The last comparison I present in this section is the one between the German and English mean dependency distances (Table 41). In Section 6.3.2 I outlined why I expect a longer mean distance for German dependency relations than for English ones, and we find that assumption confirmed by the data. This is, the mean distance between two syntactically related German words is 0.87, whereas it is only 0.49 between two English words. Table 41 confirms this result and shows in which syntactic relations the main differences lie³⁹. They are complements, subjects, sharers, objects and especially extractees.

The clause final placement of German finite verbs depending on subordinating conjunctions may be responsible for the longer mean distance of German **complements**: the head and the complement are literally at opposite ends of the subordinate clause (see example for extraction). The distance of German **subjects** (in their “normal” position, i.e. as left-dependents) from their head verbs also deserve comment. The following two word order properties of German may cause the, in comparison with English, longer mean distance. Firstly, the subjects of clause final finite verbs in subordinate clauses are almost at opposite ends of clauses (see example for extraction). Secondly, material (e.g. adverbs) intervening between subjects and the verb that functions as the head/root of the sentences may increase the distance of German subjects. Given the Verbalklammer, I find the mean distance for German **sharers** (1.64) relatively short, although it is of course three times longer than the one for English sharers. This result may indicate that the monolingual German data contain more sharer relations between verbs and predicative adjectives than between auxiliaries/modals and non-finite verbs. Adjectives intervening between objects and their head verbs may give rise to the longer mean distance of **object** dependencies. The biggest difference in the mean distances between monolingual German and English dependencies, however, clearly lies in the **extractees**. An example that illustrates the “damaging” effect of extraction and the word order in subordinate clauses on the mean distance of German is



The extractee *wenn* is six words away from its head, the main clause finite verb *ist*; the complement of the extractee (*muss*) is four words away from it; and the subordinate clause's subject (*man*) is three words away from its head. In extracted subordinate clauses that are not "small" clauses, we get three changes in dependency direction between the words that build the basic syntactic structure of these clauses. This naturally increases distance.

The comparison of the monolingual dependency relations in the sample corpus has illustrated the main word order differences between the two languages in contact in my data, and the main reasons for the longer mean distance of German dependency relations. From this comparison we would expect no, or hardly any, code-switches across dependency relations that are not shared by the two grammars, that is pre-dependent objects, sharers and negatives (of English verbs). Before I look at mixed dependencies, I contrast the monolingual dependencies from each language with the correlating mixed dependencies, that is, monolingual German with mixed head German and monolingual English with mixed head English.

6.4.2. Comparison of monolingual and mixed dependencies

Tables 42 to 49 are possibly the most interesting ones of this whole section. They compare monolingual with mixed dependencies. I will begin by discussing the differences between monolingual German grammatical functions and the same functions with a German head and an English dependent.

6.4.2.1. Monolingual German vs. mixed with a German head

Tables 42 and 43 show that out of the most common syntactic relations (complements, subjects, adjuncts, sharers and objects) three show a significant difference between how often they occur monolingually and how often they enter mixed dependency relations with a German head. I will discuss them in order of appearance in the relevant tables.

The first difference in Tables 42 and 43 relates to **complements**. There are significantly more mixed complement relations with a German head than monolingual German ones. At first sight this result may seem surprising. It falls into place when we bear in mind that determiner/pronoun – noun dependencies are the most frequent complement relation, and that nouns are the most frequently switched (or borrowed) word class in all borrowability hierarchies listed in the code-switching literature (Whitney 1881, Haugen

1950, Treffers-Daller 1994; for a summary, cf. van Hout and Muysken 1994). This result is also supported by the comparison of word class tokens from each language, see Table 56. The vast majority (125) of mixed complement relations in the code-switched corpus are between German determiners and pronouns and English nouns. Nouns are also complements of prepositions and quantifiers/numerals, and there are another 42 switches between German prepositions and English nouns and 16 between German quantifiers and numerals and English nouns. These switches between German determiners, pronouns, prepositions, quantifiers and numerals as heads and English nouns as dependents account for the significant difference between monolingual German and mixed complement relations.

The next syntactic relation that shows a significant difference in tokens between their monolingual German occurrences and the mixed ones with a German head are **subjects**. It does not make any difference whether we distinguish between left- and right-dependent subjects (cf. Tables 43 & 44), the difference is highly statistically significant. There are only 12 switches between German finite verbs and English subjects. This finding is in accordance with many other studies of code-switching which indicate that subjects are infrequently switched (Gumperz & Hernandez-Chavez 1971, Timm 1975, Treffers-Daller 1994). Switches between heads of clauses and subject pronouns are particularly infrequent according to the literature (Timm 1975). My mixed corpus contains four English subject pronouns depending on German heads (and three German subject pronouns depending on English finite verbs, see Section 6.4.2.3). An example produced by speaker *LIL is:

*LIL: **you** kannst # jauchzen .

Jen2.cha, line 1019.

The differences between monolingual German **adjuncts** and the same relations with a German head and an English dependent are also highly significant, because there are proportionally fewer mixed adjuncts than monolingual German ones. The result, however, is somewhat misleading, as we found a bafflingly large number of monolingual German adjuncts (in comparison with English ones) in Section 6.4.2 (Tables 38 and 40). Together with shares, adjuncts still form the second most frequently mixed syntactic relation after complements (i.e. the borrowed English nouns) in this section. Speaker *MEL switches adjuncts frequently.

*MEL: nein # ich bin draussen ## **as per usual**.

Jen2.cha: line 185.

An overall comparison of monolingual versus mixed complements and adjuncts is highly statistically significant ($X^2 = 6.82$, $df = 1$, $p = 0.009$). This comparison is based on the following figures.

	Complements		Adjuncts		Total	
Mono	1026	77%	302	33%	1328	100%
Mixed	559	82%	120	17%	679	100%
Total	1585		422		2007	

Comparison of monolingual and mixed complements and adjuncts⁴⁰

This finding is important because it substantiates Mahootian and Sanotorini (1996), Treffers-Daller (1994) and Muyskens' (2000) findings that adjuncts are more easily switched than complements. Given that adjuncts are frequently clause-peripheral, this finding may indirectly also support the notion of peripherality in the clauses as a factor favouring code-mixing (Treffers-Daller 1994, Muysken 2000). The considerably longer distances of English adjuncts depending on German heads in comparison with monolingual German adjuncts (see Table 46) furthermore support this interpretation.

This concludes the discussion of the dependency relations that show a significant difference between their monolingual German occurrences and those with German heads and English dependents. The grammatical functions that do not refute the null hypothesis, i.e. they occur equally as likely with both words from German as they do with German heads and English dependents, are sharers, objects, extraposees and extractees.

For **sharers** this result is, on the one hand, surprising because Timm (1975) proposed that auxiliaries and main verbs are normally found only in unilingual constructions (although she did find a few counterexamples to this constraint in her own data). My corpus contains eight switches between German auxiliaries and modals and English verbs, many of which, however, are morphologically integrated, as we saw in Section 4.1. If we focus on a different word-class-pair that can be involved in sharer relations, i.e. verbs and adjectives, this finding is less surprising. Pfaff (1975), Poplack (1980), Nortier (1989), Giesbers (1989) and Treffers-Daller (1994) all note that predicative adjectives are quite frequently switched. This is indeed the sharer relation that contributes most mixed tokens in this direction (i.e. with a German head and an English dependent) in my corpus, namely 32. One of my favourite examples is

*MEL: die [gay men] sind meistens **nice-looking** .

Jen1.cha, line 1470.

Moving on to **objects** now, the finding that there is no significant difference⁴¹ between monolingual German and mixed object relations with an English dependent is amazing, because syntactic relations between verbs and their object complements are clearly “close”. That objects are more frequently switched than subjects, however, is a fairly well established fact in the literature on code-switching.

German heads are furthermore roughly as likely to take English **extraposees** and **extractees** as they are to take German ones. Treffers-Daller (1994: 207) explicitly discusses switching for ‘dislocated constituents’ and reports 12 switches of dislocated subject NPs, 6 switches of dislocated object NPs, and 3 dislocated switched PPs in her data. Table 42 shows that my German/English data contain 3 switched extraposees and 14 switched extractees. The example quoted below illustrates an (ungrammatically) extraposed English object. Note the similarity of this example with the ungrammatical German extraposed objects quoted in Section 6.4.1.

*MEL: und ich habe ihm gegeben **twenty pence** [*] . Jen1.cha, line 471

Two examples illustrating extracted English objects are

*DOR: +" **one club** +" hab(e) ich gemeint , sagt man , wenn man nicht +/.
Jen2.cha, line 1855

*MEL: **one thirty+nine** haben wir bezahlt . Jen2.cha: line 2351.

Extraposees and extractees are “dislocated” elements and the relatively high proportion of mixed ones in my data thus supports Treffers-Daller’s (1994) proposal that switching is more frequent when a dependent is “shifted out” of its “normal” position into an earlier (“higher”) or later (“lower”) position.

The figures for German verbs negated (grammatical function “**negative**” or “not”) by English *not* are very low, but all three of them depend on clause final German verbs.

The results from this section have shown that for most syntactic relations German heads enter, there is no significant difference between the number of German and English dependents they have. This finding supports the hypothesis based on Section 6.3, i.e.

that the syntactic relations German words enter with English dependents are not very different to the ones they enter with same language words.

Before I move on to the comparison between monolingual English and mixed dependencies with an English head, I will take a brief look at the mean distances of the different grammatical functions. In Section 6.3.2 we noted that the mean distance of mixed dependency relations with a German head is actually a bit shorter than the mean distance of monolingual German dependencies. Table 46, however, shows the distances for mixed subjects, adjuncts, pre-dependent shares and post-dependent objects are all **longer** than their monolingual German equivalents. The slightly shorter mean distance of mixed dependencies with a German head (in comparison with monolingual German dependencies) is only attributable to three dependency types: complements, post-dependent sharers and pre-dependent objects. Out of these three, it is the very large number of English complements with a German head that brings the mean distance down. This result also tells us something about the syntactic structure of mixed complement relations with an English noun: they are hardly ever pre-modified. A lot of the English predicative adjectives are also very close to their German head; and so are the English objects that depend on German late verbs. The fact that English post-dependent adjuncts are almost three times as far away from their German head than monolingual post-dependent adjuncts may support Treffers-Daller (1994), Mahootian and Santorini (1996) and Muysken (2000), i.e. that code-mixing is favoured in adjoined peripheral positions.

6.4.2.2. Monolingual English vs. mixed with an English head

I have already discussed the majority of mixed dependencies in the comparison between monolingual German and mixed dependencies with a German head, as there are almost three times as many mixed dependencies with German heads in my data than with English ones. The raw numbers (Table 47) for the all English dependencies and mixed syntactic relations with a head of that language are difficult to compare because of the small sample size of the latter. I will therefore base the following discussion on Table 48, i.e. the row percentages and the statistical significance tests for the comparison.

The first column in Tables 47 and 48 shows that there is no significant difference between the monolingual English **complements** and the German complements of English heads. This indicates that there are not many “borrowed” German nouns in my corpus, which is not surprising, given that my informants have been living in the United

Kingdom for more than half a century. The majority of mixed complement relations with an English head are actually dependencies between English conjunctions and German verbs, 15 auxiliaries/modals and 5 main verbs. This dependency relation will be studied in more detail in Chapter 7.

As for German, we get a highly significant result for the difference between monolingual and mixed **subject** relations, with disproportionately fewer mixed subject relations. The findings from this and the previous section taken together show that subjects are rarely switched (in both directions). This result thus confirms previous research findings. However, contrary to the constraints proposed by Gumerz & Hernandez-Chavez (1971) and Timm (1975) there are eight switches between English verbs and German subjects, including three subject pronouns, like in the following example.

*DOR: die **do-'nt mind** ## aber **I do** .

jen1.cha: line 220.

Constraints on switching subjects or subject pronouns are therefore not supported by my data.

Moving on to **adjuncts**, Table 48 shows that there are proportionately as many German post- adjuncts of English heads as there are English ones. For pre-adjuncts, however, the difference is highly significant. More precisely, proportionately there are more German pre-adjuncts of English words than English ones. The pre-adjunct relation is favoured for switching from English to German especially by speaker *MEL. I give one of her examples, and one of *LIL's.

*MEL: als kind **I didn't like anything** aber **I love food** .

Jen2.cha, line 2058

*LIL: also die dings war [/] die xx [= name] und hat es # **in high heaven** gelobt .

Jen2.cha, line 1570

The results for **sharers** are also highly significant, but for the opposite reason. Hardly any English verbs share their subjects with German words.

As in the German case, **objects** are relatively easily switched and the difference between English words taking same or different language objects is not significant ($p = 0.397$). The following example, illustrating a switched object clause, also expresses my informant's astonishment about people who want to study code-mixing.

*DOR: **she** will@u **study** , wie [/] wie wir sprechen !

Jen2.cha: line 1653

The differences between monolingual English **extraposees** and mixed dependency relations with an English head of this type is highly significant because there are relatively more mixed ones, but the examples are ambiguous, like the following one, which could just be an adverb and a clause object.

*DOR: **I know exactly**, dass ich nicht leb(e).

Jen3.cha, line 1853

The difference between monolingual English and German **extractees** depending on an English head is also highly significant. Mixed extractions, especially of German objects depending on English verbs, are frequent (14 tokens), and the examples are unambiguous in this case. The next example illustrates a German long-distance (distance = 7) extraction.

*MEL: was die Dorit wieder geschmissen hat , I [/] **I would have liked**.

Note that for emphasis reasons speaker *MEL increases the distance of a mixed dependency relation from zero to eight in the above example.

The comparison between monolingual English dependencies and mixed dependencies with an English head has confirmed, firstly, what we hypothesized on the basis of the data presented in Section 6.3.2, i.e. that English heads preferably enter into rather “loose” syntactic relationships with their German dependents. It furthermore supports the findings of Treffers-Daller (1994) Mahootian & Santorini (1996) and Muysken (2000), i.e. that code-switching is favored in adjoined and/or peripheral positions, even more than the data presented in the previous section on German. English heads encourage switching to pre-adjuncts and extractees (and extraposed objects), but discourage switching to subjects (as with German heads) or sharers (unlike German heads). Complements and objects, arguably the closest syntactic relations, are neutral.

A look at the last table in this section (Table 49), which compares the mean distances of monolingual English and mixed dependencies with an English head, furthermore corroborates the finding that code-mixing is favoured in peripheral and adjoined positions. Table 49 clearly shows that, unlike in the German case (Table 46), all mixed dependencies with an English head (apart from objects) are longer than their

monolingual English counterparts. The same table furthermore illustrates that all dependency relations that yield a significantly higher number of mixed tokens than monolingual ones (German adjuncts, extractees), are further away from their English heads than their English counterparts.

6.4.3. Comparison of mixed dependency relations

I have already discussed all mixed dependency relations in comparison with their monolingual equivalents and will therefore only briefly comment on the mixed dependency relations with German and English heads respectively. A general look at Tables 50 to 52 shows two things. Firstly, it confirms that even in intra-sententially mixed utterances my informants hardly ever violate the rules of the two monolingual grammars they mix. There are no ungrammatical pre-dependent sharers, and only one German object and two German negatives that are placed in, for English, ungrammatical word order positions. Secondly, Table 51 illustrates that individual mixed dependency relations deviate much more from the expected distribution than their monolingual counterparts (Tables 38 and 41). This is confirmed by the significance tests.

The comparison between mixed **complements** with a German and an English head, for example, is highly significant ($p < 0.00$). We find an association because of the disproportionately high number of English dependents with a German head, that is the “borrowed” English nouns and the almost complete absence of German borrowings of this word class. Although there are almost the same number of mixed **subject** dependencies in either direction, the result of the comparison is also significant ($p = 0.006$). This, however, is because there are proportionally so many more mixed dependencies with a German head. The comparison of mixed post-**adjuncts** shows that their distribution is fairly close to the “normal” distribution of mixed dependencies with German and English heads, and thus the significance test for mixed post-adjuncts is not significant ($p = 0.132$). The result for pre-adjuncts, on the other hand, is highly significant ($p < 0.00$). We have already noted that attaching a German pre-adjunct to an English head is one of my informants’ favorite switching strategies. This is reflected in the raw figures, the percentages and the chi-square value for this dependency. I mentioned in the introduction to this section that there are no ungrammatical pre-dependent **sharers** in the code-mixed corpus. The comparison of post-dependent mixed sharers with German and English heads is highly significant ($p = 0.006$). In this case it is the large number of English predicative adjectives depending on German verbs that cause the result. Two facts pertaining to switched **objects**, which become apparent from Tables 50

to 52, have already been commented on. First, only one German object of an English verb violates English word order rules. Second, objects are seemingly easily and quite frequently switched in both directions. This result is rather unexpected, given that objects are “close” syntactic relations and can only be post-dependents in English – unless they are extracted – whereas in German they can be pre- or post-dependents, depending on their head/parent verb. The comparison of mixed objects is only significant if we separate them out according to their dependency direction. As was to be expected from the discussion in the last two sections, the results for both **extraposees** and **extractees** are highly significant ($p = 0.001$ for both). In the case of extraposees, we find that English words extrapose their dependents more frequently than German words (3 : 7). The number of extractions is exactly the same in both directions (1 : 1). Their comparison, however, is significant, because, proportionally there are more German extractees depending on English verbs than on German ones.

The results from this section confirm what we have hypothesised on the bases of the less detailed analysis in Section 6.3.3. In my data, German words act far more frequently as heads of mixed dependency relations than English words. When English words do act as heads of other language dependents, they predominantly enter syntactic relations that are not essential for building sentence structures, that is adjunction, extraction (and extraposition). These grammatical relations are also associated with long distances. The results for German are similar, but are not as strong as the ones for English. That is, German heads in mixed dependencies act much more like they do in monolingual ones, but “loose” long-distance pre-dependency relations are also favoured for switching, that is pre-adjuncts and extractees⁴².

The last test I would like to subject my data to is one for convergence. Findings are presented in Tables 53 and 54.

6.5. Tests for Convergence

Convergence, in language contact situations, refers to processes through which the languages in contact become more like each other. That is, the speakers’ monolingual grammars become more similar through contact. The influence the two grammars have on each other is assumed to be mutual (not unidirectional), and the resulting convergent structures need not have a single source. Either they are already present, but less prominent, in both languages, or they resemble both languages in part, but do not match either completely. One area of grammar in which convergence is frequently observed is

word order. The two main researchers working on German/English language contact, Michael Clyne (1967, 1972, 1987) and Monika Schmid (2002), both find considerable evidence for convergence, particularly word order adjustments, and attrition in their data. The ungrammatically extraposed objects already quoted and examples like the following one may suggest convergence in the speech of my informants.

*DOR: sie hat muessen Deutsch sprechen mit meinen Eltern . Ibron.cha, line 244

Checking my data for signs of convergence may therefore complete the picture I have presented so far. However, before I look at the tests for convergence, I would like to stress that the two languages in contact in the bilingual setting under investigation are already typologically quite similar.

The test for convergence is actually quite simple. I assume that there is evidence for convergence in individual grammatical functions, if the results of the comparison between monolingual and mixed dependencies with another language head is NOT significant, but the comparison between the two monolingual grammars IS significant. For ease of comparison I have repeated the comparison of the two monolingual grammars (Table 55) on the same page as Tables 53 and 54, which compare monolingual German and mixed dependencies with an English head, and monolingual English and mixed dependencies with a German head respectively. I will first discuss possible convergence towards German.

The comparison of Tables 53 and 55 shows that only two syntactic relations show possible signs of convergence towards German, namely (post-dependent) objects and negatives. This result is not entirely surprising. I noted in the previous section that the majority of ungrammatical mixed examples are German objects. These objects and negatives would be grammatical, if they depended on German heads; but as their heads are English, they violate English syntactic rules because English heads normally do not allow dependents of their type to precede them. In Section 6.4.2.1 I noted that the majority of ungrammatical monolingual German utterances also involve extraposed (direct) objects. All this evidence surrounding the placement of objects taken together may point towards what Clyne (1978: 753) calls syntactic convergence. One of Clyne's (1987: 751) most frequently quoted examples is

...if der Vater hat eine Farm.

Clyne suggests that his informant opts for the English word *if* in order to avoid verb-final placement in German and concludes that ‘syntactic convergence will take place around the switch, apparently IN ORDER to ease code-switching’ (Clyne 1978: 753). This line of argument will become interesting in Section 7.1. To summarise convergence towards German, there is multiple evidence surrounding objects in my data: they are switched very frequently and they get extracted and (ungrammatically) extraposed a lot. This may be due to syntactic convergence, SVO or V2 over-generalisation and/or the influence of Yiddish.

A comparison of Tables 54 and 55 illustrates that we have possible evidence for convergence towards English in three syntactic relations: (pre-)adjuncts, post-dependent sharers and again negatives. As adjuncts select a variety of word-classes as their heads and can be fairly flexibly placed in both German and English, this result may simply indicate that German and English adjuncts are syntactically very similar. The numerical evidence for negatives, both in convergence towards German and English, is so low that possibly we need not worry about it. Sharers are a grammatical function with a strong semantic component. The type of verbs they can depend on and their semantic role, i.e. defining some general characteristic of the person or thing referred to by the parent verb’s subject or object, are very similar in English and German. So possibly we are dealing with a syntactically and functionally similar dependency relation (cf. Muysken’s categorial equivalence) and this is why

- we get a significant result for convergence, and
- my informants use this dependency relation frequently for switching from German to English.

The tests for convergence point in several quite consistent directions. Firstly, there may be evidence that my speakers’ objects prefer to be post-dependents rather than pre-dependents. This is in accordance with the findings from both monolingual and mixed data. Secondly, adjuncts and shares are dependency relations that are quite similar in both languages and may therefore yield significant results for convergence. This “equivalence” may furthermore facilitate mixing.

6.6. Comparison of word-classes

Tables 56 and 57 present the distribution of German and English words by word-class in the sample corpus. The overall distribution is the same as in Table 1, that is 56% German words to 44% English words. The percentages in Table 56 show that individual word

classes deviate from this distribution, but it is only significant in four important cases. These are common nouns (cN), proper nouns or names (nN), numerals (num), adverbs (AV). The significant difference between German and English interjections and modal particles is not important for a syntactic analysis, as these elements are not linked to the remainder of the utterances by grammatical relations. It is, however, noteworthy that these elements are almost exclusively German (see Salmons 1990 and Section 6.7). The significant results for the infinitive markers *to* and *zu*, and for prepositions may well be a misrepresentation of the data. Both infinitival *to* and prepositions are always separate words in English. In German, on the other hand, *zu* and prepositions are frequently affixed to verbs (e.g. *um-zu-gehen*, *auf-geben*). Most probably I did not count all of these affix occurrences of the German infinitive marker and of prepositions as separate word-forms, and the numbers and percentages for these two word classes are too low for German⁴³.

The results of the comparison of word class tokens from each language support the quantitative analysis presented so far⁴⁴. There are significantly more English common nouns in the corpus than German ones. In Section 6.4.2 we found a significant difference in the distribution of monolingual complement dependency relations and mixed complements with a German head. This was attributed to the large number of English “borrowed” nouns that depend on German heads. The significantly different distribution of common nouns in Table 56 is a reflection of the same facts. The much larger number of German proper nouns, i.e. names, in my corpus is also not surprising, as my informants talk a lot about their friends and family, and these names are German.

The fairly high number of numerals in the sample corpus (see also Table 60) is a by-product of the data collection. The audio data on which the core corpus is based were recorded during card playing sessions. At the end of each round my informants counted their cards and this led to the large number of numerals in the corpus. The distribution of numerals between the two languages, however, refutes one of the most common and widespread myths about bilinguals: that they always count in their mother tongue. There is a highly significantly larger number of English numerals in the sample (and presumably also in the core) corpus than German ones. My informants count exactly twice as often in their second language than in their mother tongue German (in which they did most of their schooling). The core group of my informants thus clearly do not always count in their L1.

The last significantly different result in the comparison of word classes in Table 56 is adverbs. We saw in Table 38 that there are significantly more German adjuncts (the dependency relation) than English ones. Adjuncts of verbs, i.e. adverbials, are frequently adverbs and the distribution of tokens for adverbs in Table 56 thus matches the finding presented in Table 38. It furthermore supports the interpretation proposed in Sections 6.4.2 and 6.4.3, i.e. that my informants frequently switch adjunct dependencies, especially for German adverb dependents, because they are syntactically loosely linked to the remainder of the utterance and far away from their heads, i.e. sentence peripheral. This finding is also supported by the results presented in Table 58 and discussed in the next section.

6.7. Syntactically unrelated discourse elements

So far I have only dealt with those words in my corpora that are syntactically related. However, in any corpus of spoken language there are also many discourse elements that are unrelated to the remainder of the utterance. A summary of what these elements are in my data, and on which utterance periphery they occur, is presented in Table 58. The discourse elements included in this summary are adverbs, discourse markers, interjections and tags. Interjections and tags are fairly easy to identify. My classification of discourse markers is based on Schiffrin (1987). The classification of these elements, however, is not particularly important for a study like this one. It is more interesting to see how frequently they are in another language than either the first or last word in an utterance.

Excluding the figures from the last two columns for the moment, Table 58 shows that there are 254 switches between utterance peripheral discourse elements and the remainder of the utterance. This is 17% of all switches (syntactically related and syntactically unrelated). If we include switches around pauses ($> X <$) and switches around repetitions and retracings ($X [//] X$), we see that “flagged” switches constitute 20% of all switches. This finding is in line with many other studies of code-mixing.

¹ This is important because I used Chi-square and (Fisher) Exact test to assess the significance of my findings. Chi-squared tests are only valid, if the items in cells are independent. The two main corpora I use for comparison, i.e. the sample and the code-mixed corpus, are largely independent. That is, there are hardly any mixed utterances in the sample corpus and all mixed dependencies are excluded from the quantitative analysis of grammatical functions.

² These files are based on interviews rather than group recordings. The data have a clearly identifiable matrix language and the pattern of code-mixing is insertional. This is unlike the core corpus in which we predominantly find alternational code-mixing and congruent lexicalization.

File name	German		English		Total
Imot.cha	4,665	87%	660	13%	5,336
Isper.cha	2,287	27%	6,276	73%	8,576
Ifen.cha	7,216	98%	156	2%	7,383
Iariel.cha	5,784	47%	6,342	53%	12,180
Ihog.cha	10,633	94%	643	6%	11,288
Total	30,585	68%	14,077	32%	44,763

Number and percentage of German and English words in files Imot.cha, Isper.cha, Ifen.cha, Iariel.cha and Ihog.cha; the base language changes in files Isper.cha and Iariel.cha. The total is higher than the sum of word tokens from both languages because the total also includes words.

³ CLAN provides automatic word-class taggers for both languages represented in the corpus.

These taggers, however, cannot be used on LIDES files, as the CLAN programmes performing the automated analysis only work on monolingual files.

⁴ It would be interesting to compare the monolingual stretches in the Emigranto corpus with monolingual Viennese German and monolingual London English. This comparison, however, is problematic because of a lack of comparable corpora.

⁵ Another way of compiling the sample corpus would have been to select random unconnected utterances. As my informants frequently complete each other's utterances, this method was not chosen.

⁶ Line 1310 from IBron.cha, lines 476, 1648 and 2940 from Jen1.cha, line 1279 from Jen2.cha and line 495 from Jen3.cha.

⁷ The figures do not add up to 100% because the corpus contains words whose language-origin cannot be clearly identified, i.e. words tagged as @u; see Chapter 3. The core corpus contains 0.5% unidentifiable words, the sample corpus 1%, and the code-switched corpus 1.5%. The percentages in the total column represent column percentages of the total and the core corpora, see Footnotes 8, 9 and 10.

⁸ The core corpus constitutes 52% of the overall corpus.

⁹ The sample corpus constitutes 4.1% of the core corpus (not the overall corpus).

¹⁰ The code-switched corpus constitutes 14.2% of the core corpus (not the overall corpus).

¹¹ In large samples even an extremely small difference in the population is detected as different from the null hypothesis value of zero.

¹² The difference is also significant, but it is not meaningful because of the large sample sizes; see Footnote 11.

¹³ For speaker *MEL $p = 0.19$; *LIL $p = 0.028$, *TRU $p = 0.001$; *DOR & *EVA $p = 0.000$.

¹⁴ Utterance and tone unit terminators had to be added to the command extracting utterance final words. For the commands searching for words followed by same and different language words, see footnote 14.

¹⁵ Utterance internal transcription symbols involving more than one character with spaces at either side and/or word delimiters (. ? ! , ; [] < >), again with spaces at either side, count as words. The command `combo+s*\@4^\@2` does not pick up switches if one of the above mentioned symbols intervenes. Therefore `+s*\@4^^^\@2` was used. The figures produced by the first command are given in brackets in Table 5.

¹⁶ The conservative count excluded switches between phonologically realised words and omitted or ellipted words and switches between words and undecided words.

¹⁷ The switch frequency is the number of words spoken before a switch occurs.

¹⁸ $p = 0.000$ for both comparisons, but $X^2 = 139$ (df = 4) including EVA and $X^2 = 44.9$ (df = 3) excluding speaker EVA.

¹⁹ Excluding speaker EVA.

²⁰ This statement can be refined by adding the observation that the switch frequency of 5 is due to the 7.3% of mixed utterances that contain multiple switches.

²¹ All sections from 6.3. onwards are based on the sample and code-mixed corpora, as only these two data sets are analysed for grammatical relations.

²² Note, however, that the null hypothesis states that each word in a dependency, i.e. both head and dependent, must satisfy the constraints imposed on it by its own language.

²³ The greater the distance, the greater the processing load because the earlier word has to be maintained in working memory until the later word is processed. The effect of dependency distance is easy to investigate experimentally by means of immediate recall experiments in which the number of words forgotten can be taken as a measure of syntactic difficulty. This number

generally increases with distance' (<http://www.phon.ucl.ac.uk/home/dick/enc.html> entry on "distance")

²⁴ This is particularly important for my data because in spoken Austrian German the simple past tense is hardly ever used.

²⁵ A separate test performed on verb types showed that overall German verbs are not significantly (0.112) less frequently involved in mixed dependencies than in monolingual ones, and neither are German main verbs ($p = 0.192$). German auxiliaries and modals, however, are significantly ($p = 0.001$) more frequently involved in mixed dependencies than English ones. This is interesting as these verb types are frequently found in V2 position which often coincides with SVO. They may therefore be considered as congruent categories (Muysken 2000) and/or establish congruence sites (Sebba 1998).

²⁶ Table 14 is based on normed numbers because there are 12% more German dependencies in the sample corpus than English ones.

²⁷ The percentages in Table 15b are based on heavily normed figures as there are approximately three times as many mixed dependencies with German heads than with English ones.

²⁸ We may have been looking more at the effects of distance rather than dependency.

²⁹ In indirect syntactic relations we know the language of the head – in direct post-dependents the left word is the head and in pre-dependents the right word is the head (see coding rules 1-3) BUT we do not know the language of the dependent.

³⁰ Note that this finding does not contradict Table 6. Table 6 showed that there are more switches from German to English; the findings presented in this section show that a switch "back" is more likely after an English than after a German word. This may lend further support to the assumption that German functions as a base language.

³¹ In the sample code-mixed corpus 84% of English words directly related (distance = 0), compared with only 68% of German words; in the core corpus these figures are different, but the proportions are the same, see Table 25).

³² Of the non-switching pairs in the sample code-mixed corpus, 64% of direct post-dependents are English, and only 52% German.

³³ I repeat Footnote 4 from Chapter 6 here. It would be interesting to compare monolingual Emigranto German and English with monolingual Viennese German and monolingual London English. This comparison, however, is not possible because of a lack of comparable tagged corpora.

³⁴ Tables 37 – 58, i.e. the tables for Section 6.4, are to be found in the Appendix.

³⁵ The numbers for prepositionals and particles in the sample corpus are so low that I conflated the figures.

³⁶ Adjuncts are not valents and can be omitted without affecting grammaticality.

³⁷ The number agreement marking in this example is ungrammatical but I think this is a speech error rather than a syntactic one, as *DOR is talking not only about her daughter *VIV but also her grandson *NIC.

³⁸ I asked 8 native speakers of Austrian German for grammaticality judgements on the examples involving extraposed direct objects. Those informants who live in Vienna, found these examples marginally acceptable.

³⁹ For empty cells mean distances are not available.

⁴⁰ This comparison does not include extractees because they are neither adjuncts nor valents.

⁴¹ For >0 $p = 0.272$, and for <0 $p = 0.427$.

⁴² Notable exceptions to this generalisation are "borrowed" English noun complements and predicative adjectives.

⁴³ This explanation may also accounts for the very low number of tokens of prepositionals/particles in Table 37.

⁴⁴ For the explanations proposed for the five important significant results in Table 56 it is important to remember that the sample corpus does contain code-mixed utterances.

7. Qualitative Analysis

7.1. Code-switching at clause boundaries: the case of *because* and *weil*¹

Code-switching at clause boundaries, particularly switching between main and subordinate clauses, was chosen as a research area for several reasons.

First, the code-switched corpus contains a large number of switches between main and subordinate clauses (37), not including the 27 switches involving *because* discussed in more detail below.

Secondly, it is interesting from a syntactic point of view. If German-English bilinguals want to code-switch subordinate clauses, they need to resolve the problem of English being SVO whereas German finite verbs depending on subordinating conjunctions generally being placed in clause-final position (SOV)². How this word order contrast is resolved is relevant to the underlying question in all grammatical code-switching research, i.e. whether there are syntactic constraints on code-mixing.

Thirdly, code switching at clause boundaries has attracted much attention in the research area. Gumperz (1982), for example, proposed that coordinate and subordinate conjoined clauses can be switched freely, but the conjunction must always be in the same code as the conjoined sentence. Sankoff and Poplack (1981: 34) observe that in their Spanish/English corpus coordinate conjunctions tend to be in the language of the following constituent. Subordinate conjunctions, on the other hand, tend to remain in the language of the head element on which they depend. Pfaff (1979) quotes several counterexamples to both these hypotheses. Bentahila & Davies' (1983) corpus of Arabic/French yields numerous examples of switches at various types of clause boundary: switching between coordinated clauses, switches between main clauses and subordinate clauses, switching between complementizers and the clauses they introduce, and examples where the conjunction is in a different language from both clauses.

Although my corpus also contains switches at all the points discussed by Bentahila & Davies (1983), my data largely support Gumperz' (1982) constraint, that is, subordinate

conjunctions (apart from *because*) tend to be in the language of the subordinate clause that depends on them, and not the head element on which they depend.

An example in which a coordinating conjunction is in a different language from both clauses from my data is

*DOR: **Vivien came down to me und told me** +... Jen1.cha, line 69

Examples illustrating switches between main and various types of subordinate clauses in both directions are

*MEL: ich hab(e) gedacht, **there is going to be a fight.** Jen1.cha, line 987

*MEL: **I forgot** , dass wir alle wieder eine neue partie angefangen haben .
Jen1.cha, line 2541

*TRU: die mutter wird ihr gelernt haben , **how to keep young** . Jen1.cha, line 2016

*DOR: wenn du **short** bist , **you wouldn't talk** . Jen3, line 581-2

*DOR: aber wenn man geld hat , **you talk** .

*TRU: er schreibt fuenfzehn , **if you leave it in your hand** . Jen2.cha, line 932

*LIL: das haengt davon ab , **what “nasty” is(t)@u** . Jen2.cha, line 1062

Furthermore, several researchers (Gardner-Chloros 1991, Salmons 1990, Treffers-Daller 1995, Bolle 1995, Boumans 1998) studying code-mixing between SVO vs. SOV languages noticed that the clauses depending on switched conjunctions are frequently not SOV but V2. The conjunction in these examples, furthermore, is frequently the causal conjunction *because*, *parce que* and *omdat*. This led Boumans (1998: 121) to hypothesis that ‘... it is possible that foreign conjunctions do not trigger verb-final in Dutch and German clauses simply because they are used in functions that require main clause order’. He, however, found it ‘hardly feasible to examine this hypothesis in relation to the published examples because these are for the most part

presented out of context' (Boumans 1998: 121). I will show that a fully (LIDES) transcribed corpus of German and English data allows us to verify this hypothesis.

Section 7.1 is a link between the quantitative (Chapter 6) and a predominantly qualitative analysis (7.2) of my data. Both types of analysis, qualitative structural and quantitative distributional, are considered to be necessary for a comprehensive description of the data, because speakers of German, English and Emigranto use different structural patterns to different degrees and for different purposes. The variation in the data can best be described quantitatively; the qualitative analysis provides an explanation for the structural patterns found. This combination of methodologies with furthermore serve to address Muysken's (2000: 29) statement that '... we do not yet know enough about the relation between frequency distributions of specific grammatical patterns in monolingual speech data and properties of the grammar to handle frequency in bilingual data'. I will compare the *because*- and *weil*-clauses in mixed utterances with monolingual German and English examples and show that we **do** know enough about the syntax and pragmatics of this construction to explain both the frequency distribution of causal conjunctions and the use of verb second (rather than verb final) word order.

Before I present the empirical issues and the analysis, I need to state the relevant word order rules for finite verbs in German and English. This is done in the next section.

7.1.1. Word order rules for English and German finite verbs

Subordination was chosen as an area of investigation because the two languages in contact in this particular situation, German and English, display some interesting differences. The contrasting word order rules for English and German, stated in Word Grammar rules, are:

E1) In English any verb follows its subject but precedes all its other dependents. This holds true for main as well as subordinate clauses and gives rise to SVO order in both clause types.

E2) Subordinators, e.g. *because*, require a following finite verb as their complement. A word's complement generally follows it³.

For German the most relevant rules concerning word order in main and subordinate clauses are:

G1) A default finite verb follows one of its dependents but precedes all other dependents.

This gives rise to a verb second (V2) word order in German main clauses.

G2) A finite verb selected by a lexical subordinator/complementizer takes all its non-verb dependents to the left, i.e. it is a “late”⁴ verb.

G3) Subordinators/complementizers, e.g. *daß*, select a “late” finite verb as their complement⁵. According to G2 finite “late” verbs follow all their non-verb dependents.

An example illustrating rules G1-G3 would be

Ich	glaube	nicht,	daß	wir	die	Dorit	schon	gekannt	haben
I	think	not	that	we	Dorit		already	known	have

Jen3.cha, line 83

The utterance initial main clause displays V2 word order. The finite auxiliary *haben* which depends on the subordinator *daß*, on the other hand, is in clause final position following all other constituents including non-finite verbs like *gekannt*. In English finite verbs in subordinate clauses do not behave differently to finite verbs in main clauses. Therefore we do not have to override the default rule E1 in the “isa-hierarchy” of grammar rules. Because German finite verbs depending on a subordinator take a different word order position than “independent” finite verbs, we need a more specific rule (G2) that overrides the default rule (G1) in the cases stated, i.e. finite verbs selected by German subordinators.

7.1.2. The empirical issues

7.1.2.1. Asymmetry between conjunctions of reason

Table 56 shows that the distribution of German and English subordinators/complementizers in the corpus is approximately 60 : 40. If, however, we focus on *because* and the translation equivalent from the same word class, the subordinating causal conjunction *weil*, we get a very different picture. The corpus yields twice as many tokens of the English subordinator as it does of *weil* (see Table 1). A typical use of *because*, especially for speaker DOR, is

(2)

DOR: *es war unsere [...] Schuld because man fühlt sich*
%glo: it was our fault one feels oneself
'It was our fault because one is more at ease with one's compatriots.'

mit den eigenen Leuten wohler.
with the own people happier. lbron.cha, line 221

Because in the above example can be argued to be a single lexical item inserted in otherwise German discourse. This particular usage of the English causal subordinator is not restricted to speaker DOR.

(3)

LIL: **because** *er ist ein aufbrausender Irishman.*
%glo: he is a hot-blooded
'...because he is a hot-blooded Irishman.' Jen1.cha, line 389

Because also enters syntactic relations where the word on which it depends is English (*eat*) and its dependent is German (*schmeckt*), as in

(4)

DOR: **eat it with** *der Hand-! because das schmeckt ganz anders.*
%glo: the hand it tastes very differently
'eat it with your fingers! because it tastes differently.'
lbron.cha, line 2214

or vice versa, e.g. *because* has a German head verb (*habe*) but an English complement (*know*)

(5)

MEL: *ich hab's nicht einmal gezählt because I know I'm going to lose.*
%glo: I have it not even counted
'I haven't even counted it because I know I'm going to lose.'
Jen1.cha, line 881

The German subordinator of reason, *weil*, on the other hand, only enters into monolingual dependency relations.

(6)

DOR: *dann ist sie, weil sie so unglücklich war, dort gestorben.*

%glo: then has she, because she so unhappy was, there died

‘Then she died there because she was so unhappy.’

lbron.cha, line 1002

So there is not only an asymmetry in the number of tokens each subordinator yields, but also in the language distribution of the immediate syntactic relations which *because* and *weil* enter into, i.e. their main clause head verb and the subordinate dependent verb. The results are summarised in Table 1.

	head _E - dep _E	head _E - dep _G	head _G - dep _G	head _G - dep _E	total
<i>Because</i>	86	5	16	6	123
<i>Weil</i>	0	0	59	0	59

Table 1: language of head and dependent of *because* and *weil*

The phenomenon of single lexical item subordinate conjunctions in other language contexts is not uncommon in code-mixing literature⁶. As far as directionality of the switch is concerned, the situation in the Emigranto corpus is in sharp contrast with the findings of Clyne (1973) who studies German/English code-mixing among the Jewish refugee community in Melbourne, Australia. He reports that ‘the words transferred from German to English are mainly conjunctions (*denn, ob, und, weil, wie, wo*)’ (Clyne 1973: 104). The corpus from the refugee community in London also shows a high propensity for switching conjunctions, however the vast majority of them are English conjunctions in otherwise German discourse. Lexical transfer of the same word class thus seems to work in the opposite direction in two bilingual communities with a very similar sociolinguistic profile mixing the same language pair.

To rule out the possibility that English *because* is used in place of another German causal conjunction, I will now look at the other possibilities. *Da* is another causal subordinator, thus producing the identical word order effects to *weil*, but normally used in more formal contexts. The whole corpus yields only one example of German *da* used as a subordinating conjunction. This token is embedded in formal discourse and was

produced by speaker who does not use the mixed code as a discourse mode. *Denn* is a causal coordinating conjunction. It was used once by a speaker from the group recordings (not DOR) and three times by a speaker in a more formal setting. *Denn* has increasingly gone out of use in colloquial German (Pasch 1997, Uhmann 1998), however, since it is used by my informants, we need to consider it as a possible translation equivalent of *because*. This possibility is interesting because it involves word order issues: as a coordinating conjunction, *denn* always takes V2 order in the clause following it. The relations between *weil* and *denn* will be discussed further in Section 7.1.3.2 on word order.

7.1.2.2. Verb second word order after *because* and *weil*

Examples 2-4 also demonstrate the structural feature under investigation: German finite verbs occur in main clause word order position in subordinate clauses introduced by *because*. In actual fact not one German finite verb depending on *because* is in clause final position (as in monolingual German subordinate clauses with an overt German subordinator; see example 4).

Furthermore, not all finite dependent verbs follow their subject. Some of them follow fronted indirect objects as in (7), others follow adverbials as in (8).

(7)

DOR: # BECAUSE *dem Computer brauchst' es nicht zeigen.*

%glo: the computer need you it not show.

‘Because of the computer you need not show it [the ticket].’

Jen2.cha, line 729

(8)

LIL: *is' wahr -? BECAUSE bei mir hat schon +...⁷*

%glo: it's true at my place has already

‘It's true, because at my place has already...’

Jen1.cha, line 298

The word order in subordinate clauses after *because* is summarised in Table 2.

	dependent English	Dependent German		
	SVX	SVX	XVS	SOV
<i>Because</i>	92	15	6	0

Table 2: word order in subordinate clauses after *because*

What are supposed to be German dependent verbs occur in second position after *because*, which shows that *because*, for the speakers of Emigranto, has not taken over the syntactic characteristics of the German subordinating conjunction *weil* which requires its dependent verbs to be clause final.

Let us now take a closer look at this subordinator. Table 1 illustrates that *weil* only has German complements. According to the rules of standard German (rules G2 & G3), finite verbs depending on an overt subordinator should follow all their dependents, i.e. be clause final. This is not borne out in the corpus. Note, however, that 58% of dependent verbs ARE in final position after *weil*, whereas none is in this position after *because*. Table 3 summarises the position of the dependent finite verb in *weil* clauses from my corpus. In order to see whether verb second after *weil* is a parochial convention of Emigranto or not, I also give the distribution of V2 and Vf from several other corpora of monolingual spoken German⁸ for comparison.

<i>Weil</i>	Vf	V2	Vf	V2
Emigranto	34	25	58%	42%
BYU (Vienna)	62	11	85%	15%
Farrar (1998) BYU	1147	517	69%	31%
Schlobinski (1992)	74	22	70%	23%
Uhmman (1998)	24	19	56%	44%
Dittmar (1997)	99	29	77.3%	22.7%

Table 3: verb position after *weil* partly based on (Uhmman 1998: 98)

Table 3 shows that between 15% and 44% of dependent verbs in these corpora are not in final position. So *weil*+V2 word order is not just a peculiarity of “refugee” German.

We thus have two problems to solve: 1) the asymmetrical distribution of *because* and *weil* in the Emigranto corpus, and 2) the word order variation in both mixed and monolingual causal clauses introduced by *because* and *weil*. In the next section I will suggest possible solutions to these two problems.

7.1.3. Possible explanations

7.1.3.1. for the asymmetry of *because* and *weil*

The frequencies with which *because* and *weil* occur in dependency relations (summarised in Table 1) suggest that for the asymmetry between *because* and *weil* a probabilistic perspective is required.

Fourteen out of the sixteen tokens of *because* in an otherwise German context were produced by one speaker (DOR). This is even more significant if we remember that this speaker is German dominant. The data from this speaker only contain 7 tokens of the German subordinator *weil* (and no *denn*). *Because* thus seems to replace *weil* for specific uses (see Section 7.1.2.1) in the speech of this speaker. This use of the causal conjunctions is also to be found among the close-knit network of bilinguals who use the mixed code as a discourse mode (speakers TRU, MEL and LIL); but there is no significant asymmetrical relation between *because* and *weil* in the rest of the corpus.

Reasons for the discrepancy between the British and Australian corpora will have to remain speculative for the moment. I will, however, come back to this point at the end of Section 7.1.3.4. Why German speaking Jewish refugees in Australia incorporate German conjunctions into their English, and the directionality of lexical transfer is reversed among the same speakers in Britain could be due to the Australian corpus having been collected approximately twenty years before the London corpus. Michael Clyne collected data from this speech community in the 1970s. The Emigranto corpus was collected in 1993. An additional two decades of exposure to English of the London-based refugees may be a possible explanation for this discrepancy. Data from American/German dialects that have been in contact with English for up to two centuries support to this assumption. See example (9) from Salmons (1990: 472).

(9)

Almost jedes moi is Suppe gewen, BECAUSE mir han kei
every time is it soup be we have no

Zeit khat fer Supperrecht essen.
time had for soup properly to eat

Treffers-Daller (1994: 192-5) discusses (9) and (10) and suggests analysing the conjunctions in these two examples as coordinators. For monolingual English Schlepppegrell (1991: 323) argues that ‘a characterisation of all *because* clauses as subordinate clauses [...] is inadequate’. The possibility of a paratactic⁹ function for *because* will be discussed in the next section.

Gardner-Chloros's (1991) French/Alsatian data also offer an interesting example of two Alsatian clauses linked by a French causal conjunction.

(10)

<i>Un</i>	<i>noh</i>	<i>isch</i>	<i>de</i>	<i>Kleinmann</i>	<i>nunter, <u>parce que</u></i>	<i>ich</i>	<i>hab</i>
And	now	is	the	Kleinmann	down there	I	have

<i>mi</i>	<i>dort</i>	<i>mue</i>	<i>melde.</i>
myself	there	must	check in.

The German verbs selected by the English and French conjunctions in examples (9) and (10) follow just one dependent, in these cases their subjects. Note that what Rutherford (1970), Schlepppegrell (1991) and others showed for *because*, Le groupe 1-1 (1975) did for *parce que*: they showed that this French conjunction can also be used paratactically and when not used in a strictly subordinating way, it does not trigger verb final placement (as required by G3).

7.1.3.2. V2 after *because* and *weil*

The clearest result of the quantitative analysis presented in Table 2 is that all German finite verbs in clauses after *because* are in second position and none in clause final position.

The Word Grammar rules stated in Section 7.1.1 account for the empirical data because English subordinators only require finite verbs as their complements (rule E2). German subordinators (rule G3), on the other hand, provide a specific context that requires dependent verbs to take all their dependents to the left. As *because* is an English subordinator which does not specify that its complement has to be a clause final verb, we get main clause word order (SVO in monolingual English or V2 in mixed utterances).

Supporting evidence for this interpretation comes from the six instances where the finite verb follows a dependent other than its subject (cf. examples 8-9 and 11 below).

(11)

DOR: I lost because # dreimal gab sie mir drei Könige.
 three times gave she me three kings.

‘I lost because thrice did she give me three kings.’

Jen1.cha, line 817

In the above example the verb is in second position, but the clause is clearly not SVO. The finite verb is preceded by an adverbial but followed by the subject. In other words, the clause displays the V2 order expected in German main clauses.

But how do we know that *because* and the *because*-clause are used in a restrictive subordinating way in examples 8, 9 and 11? This question needs to be addressed because research conducted by, amongst others, Rutherford (1970), Schleppegrell (1991) and Sweetser (1990), cast doubt on the characterisation of ALL *because*-clauses as subordinate clauses. Especially in spoken discourse, *because* can be used in a variety of non-subordinating and not strictly causal functions.

Several criteria have been proposed to distinguish between restrictive (i.e. subordinating¹⁰) and non-restrictive *because*-clauses (Rutherford 1970). In sentences containing restrictive *because* clauses yes/no questioning of the whole sentence is possible; pro-ing with *so* or *neither* covers the entire sentence; they can occur inside a factive nominal; and if another *because* clause were added, the two causal clauses would occur in simple conjunction. In semantic terms the main and the subordinate clause form one complex proposition and the *because*-clause provides the cause or reason for the proposition itself. This causal relationship is one of “real-world” causality (Sweetser 1990: 81). Chafe (1984) asserts that restrictive *because* clauses have a reading that presupposes the truth of the main clause and asserts only the causal relation between the clauses. These clauses tend to have a commaless intonational pattern.

I will now apply these characteristics to some of the causal clauses introduced by *because* in the corpus cited so far. Utterance (11) passes all of Rutherford's (1970) syntactic criteria for restrictive *because*-clauses. The main and *because*-clauses form one complex proposition with a reading in which "her giving the speaker three kings" is the real world reason for the speaker losing the game of cards. The truth of the sentence-initial clause is presupposed and the causal relation between the two clauses is asserted. These properties of (11) speak for a restrictive analysis. The intonational contour of the utterance, however, displays a short pause after the conjunction¹¹. Note furthermore that the causal clause in (11) contains a pre-posed constituent that triggers inversion, i.e. a main clause phenomenon (Green 1976). So there are indicators for both a restrictive/subordinate reading but also syntactic and intonational clues that point to a non-restrictive/epistemic reading in which the speaker's knowledge causes the conclusion. The latter interpretation suggests non-subordination, which would justify the V2 word-order pattern.

Example (2), repeated here with more context (to facilitate the interpretation) and prosodic information as (12), contains the English conjunction *because* but is otherwise lexified with German words.

(12) DOR: *wir waren nie mit richtige Englaender zusammen*

'we never mixed with "real" English people'

DOR: *man hätte können # man hat nicht wollen.*

'we could have # but we didn't want to'

DOR: *es war unsere [...] Schuld-.*

%glo: it was our fault

because *man fühlt sich mit den eigenen Leuten wohler.*

one feels oneself with the own people better.

'because one feels more at ease with one's fellow countrymen.'

Ibron.cha, line 217-22

This example passes none of Rutherford's (1970) "tests". The intonational drop before the conjunction which intonationally separates the two clauses also suggest a non-subordinate analysis for (12). A restrictive reading of the whole construction is

awkward if not unacceptable: feeling relaxed in the company of fellow compatriots is not the cause or reason for feeling guilty. The non-restrictive reading in which the *because* clause provides the reason why the speaker said “it was our own fault” is far more plausible. The *because* clause, furthermore, indicates an interpretative link between clauses that are several utterances apart: the last utterance in (12) provides a ‘long-distance’ reason for the first utterance in this sequence. Schleppegrell (1991: 333) calls these uses of *because* ‘broad-scope thematic links’. They can be only identified when a corpus provides the relevant context for the example. The wider context also identifies the clause preceding the causal clause as presupposed and thematic. The information provided in the causal clause is new and asserted.

The analysis so far suggests that *because* is used in non-restrictive and non-subordinating functions in the Emigranto corpus. Without repeating them, I will now briefly discuss the other examples in which *because* introduces a clause with predominantly German lexical items (Examples 3-4 and 7-8). Example (3) is a response to a preceding wh-question and thus an independent utterance, the information presented in the reply is not informationally subordinated, it forms the focus of the discourse and provides new information (Schleppegrell 1991: 31). Example (4) has two intonational contours. The intonational rise and the verb first order mark the initial clause as a command or suggestion, i.e. an independent proposition; the following *because* clause then represents an elaboration of that proposition. The content of the causal clause is therefore not presupposed. Example (4) displays all the characteristics of an “epistemic” (Sweetser 1990) *because*, which indicates ‘elaboration and continuation in non-subordinating and non-causal contexts’ (Schleppegrell 1991: 323). The *because* clause in example (7) is preceded by a short pause, contains a main clause phenomenon (topicalization), and is reflexive on the previous discourse; finally, the *because* clause in (8) follows a rising intonation of the initial tag, and again explicitly mentions the speaker’s knowledge state (“it’s true”).

We can conclude that those clauses in which *because* has a German (V2) verb as its complement, display more characteristics of ‘non-restrictive’ (Rutherford 1970) clauses and should therefore be analysed as paratactic rather than subordinating. The Word Grammar rules formulated in Section 7.1.1 still account for the data because if *because*

is not analysed as a subordinator, the default rule G1 is not overridden and G2 and G3 do not get activated.

The analysis of the code-mixed data discussed so far indicates that the predominantly German clauses introduced by *because* fulfil functions that are not strictly causal but rather epistemic, broad-scope thematic link etc. This distinct usage is also reflected in their structural and intonational patterns. We can therefore assume that we are dealing with non-restrictive *because* that is non-subordinate and thus triggers main clause (V2) word order.

However, we also need to consider the monolingual data. The German Emigranto data is more worrying at first sight. Like *because*, *weil* was traditionally analysed as a subordinating conjunction with causal meaning which takes a finite verb as its complement. These grammar rules are not absolutely adhered to by the speakers of Emigranto and “continental” German. Only 58% of the dependent verbs in German Emigranto *weil*-clauses are in clause final/“late” position. Table 3 shows, furthermore, that in corpora of similar, i.e. southern, varieties of German only 31-85% (with an average of approximately 67%) of the subordinate clauses introduced by *weil* are grammatical according to the rules for monolingual German as stated in Section 7.1.1.

The recent German literature on *weil* constructions (Günthner 1993, 1996, Pasch 1997, Uhmann 1998), however, suggest an explanation for the monolingual German data and opens up the possibility for an interesting interpretation of the mixed data. There is agreement among the above named researchers that a) there is considerable variation in the use of *weil* + V2 or *weil* + Vf, b) *weil* + V2 is most frequent in southern German dialects, and c) *weil* clauses with verb final placement and *weil* clauses with main clause (V2) word order are found to show systematic but not absolute differences. In a nutshell, the analysis for German *weil* is similar to the analysis proposed for English *because*: there are two types of *weil* clauses, one strictly subordinating one, and several non-restrictive paratactic uses. The factor that best seems to account for the data is the information structure of the construction. If pragmatics and syntax, which in German of course is a much clearer indicator than in English, fail to provide clear criteria as to which type of *weil*-construction we are dealing with, intonation can once again help to disambiguate.

Example (22) from the Emigranto corpus illustrates epistemic *weil* + V2.

(13)

LIL: sie hat sich gedacht, die [/] die muss doch Wien kennenlernen,
weil die eltern sind beide aus Wien.

‘She thought she needs to get to know Vienna because both parents are from Vienna’

Jen3.cha, line 107-8

Note that in (13) *weil* could be replaced by the German coordinating conjunction *denn*. Pasch (1997) and Uhmman (1998) agree that the non-restrictive *weil* seems to take the position of Standard German *denn* in the system of conjunctions of reason in colloquial German.

In the analysis so far it has been established that there are ‘restrictive’ and ‘non-restrictive’ *because* clauses in English and ‘restrictive’ and ‘non-restrictive’ *weil* clauses in German. A cross-linguistic comparison of these clause types revealed that they share many of their discourse-pragmatic, syntactic and intonational characteristics. Speakers of Emigranto use both clause types from both languages in monolingual contexts. In addition to this, they employ *because* in code-mixed contexts. They treat English *because* as the translation equivalent of the non-restrictive *weil*+V2 or *denn*. Their linguistic competence tells them that these constructions are equivalent in syntax and pragmatic content.

This was demonstrated for the quoted examples and also holds true for the *because* followed by *weil*+V2 examples not reproduced in this paper. Furthermore, if we apply this analysis to the quantitative asymmetry found in the corpus between the two conjunctions *because* and *weil* and add the 21 tokens of *because*+V2 to the *weil* tokens, this asymmetry shrinks to a figure (80 *weil* : 120 *because*) which is in line with the general language distribution in the corpus. In addition to the syntactic and pragmatic reasons for using this “congruence approach” (Sebba 1998: 1) to switching at clause boundaries, my informants may also be dialectally pre-disposed to the *weil*+V2 construction because all of them are L₁ speakers of a southern German variety.

I will now briefly return to the discrepancy between the Australian (Clyne 1987) and London corpora mentioned in Sections 7.1.2.1 and 7.1.3.1. The question was why German speaking Jewish refugees in Australia incorporate German conjunctions into their English, and the directionality of lexical transfer is reversed among the same speakers in Britain. I hypothesised that duration of language contact may have something to do with it. At the time of data collection, German speaking refugees in Australia had been mixing German and English for approximately thirty years. In London, on the other hand, these two languages had been in contact for more than half a century at the time the Emigranto data were collected. Another situation where we can witness long-term contact between the two languages under investigation are German American dialects. Note, furthermore, that example (9) from these data (Salmons 1990) also has main clause word order after *because*.

The development in Pennsylvania German (Louden 2003) is particularly interesting in this respect. Louden (2003) illustrates the causal conjunction paradigm in Pennsylvania German data from the 19th century onwards. In the second half of this century he found the standard German distribution of *weil* + verb final and *dann* (< Germ. *denn*) + V2. In data from the beginning of the 20th century Pennsylvania German still has verbs depending on *weil* in final position, *dann*, however, has been replaced by *fer* (< Engl. *for*) + V2. In modern sectarian PG *weil* is backed up with (*d*)*ass*, a historical merger of *dass* with comparative *als*, and *for* (originally *dann* < Germ. *denn*) has been replaced with *because* + V2.

This development is interesting for several reasons: Pennsylvania German, in the late 19th, early 20th century went through a phase that mirrors present day English in the distribution between *because* and *for*. In modern Pennsylvania German, *weil* does not seem to be able to function as subordinator in its own right any longer and it has to be backed up by another complementizer to trigger verb final placement. This supports rule G2 (Section 7.1.1) which implicitly proposes a subordinate feature on lexical complementizers. Modern Pennsylvania German seems to have lost this feature and therefore needs to be “backed up” by another subordinator to trigger verb final word order¹².

Dann in modern Pennsylvania German, on the other hand, after having gone through the stage of *fer* (<Engl. *for*), is eventually replaced by *because*, as in the Emigranto data.

This development not only backs up the speculation voiced in Section 7.1.2.1, i.e. that the discrepancy between the Emigranto and the Australian German-English corpora might be due to prolonged language contact, but also the qualitative analysis presented in Section 7.1.3.2.

7.1.4. Conclusion

It has been demonstrated how frequency distributions of a specific grammatical pattern in monolingual speech data can be combined with our knowledge about syntactic and pragmatic properties of grammars to handle frequency in bilingual data (Muysken 2000). The grammatical pattern under investigation in this study is word order in *because* and *weil* clauses. The quantitative analysis of monolingual and code-mixed examples of this structure revealed that a) the core group of informants favour the English causal conjunction *because* over German *weil* or *denn*; the use of *weil* and *denn* are restricted to monolingual German contexts, *because* is also used to introduce mixed utterances; b) the word order in *weil* clauses varies between verb final, as required in subordinate clauses, and verb second, the main clause order; the coordinating conjunction *denn* only occurs once and with main clause order, as expected; mixed clauses introduced by *because* invariably have verb second structure. Independent research on the syntactic, intonational, semantic and pragmatic properties of monolingual *because* and *weil* clauses has shown that these properties cluster to form two main types of causal clauses: restrictive and non-restrictive (Rutherford 1970). The qualitative analysis of the monolingual causal clauses in the Double-Dutch/Emigranto corpus revealed that they also fall into these two types AND that the mixed utterances introduced by *because* predominantly have the grammatical properties of non-restrictive clauses. Thus Boumans' (1998: 121) hypothesis that 'foreign conjunctions do not trigger verb-final in German clauses simply because they are used in functions that require main clause order' could be verified.

7.2. Gender Assignment

This chapter deals with gender, another aspect of syntax where the two languages in contact in Emigranto differ. English only marks the gender of human and a few animate nouns in the pronominal system. In German, on the other hand, every noun has a grammatical gender that is also reflected in its heads and/or dependents. English nouns that are borrowed into German and Emigranto become integrated into the German gender system. The aim of this chapter is to identify the principles that are responsible for the assignment of gender to English nouns in a German context.

After the basic terminology has been defined, I will introduce the English system, followed by an outline of the more complex German system. This will then be followed by a review of the code-mixing literature on gender assignment, paying specific attention to the assignment of gender to English borrowings and loanwords in German. In the main Section (7.2.5) I will illustrate the working of gender-assignment-rules on the (nonce) borrowings and established English loanwords in the core corpus. I do not aim at a comprehensive analysis of all English nouns in the overall corpus. This Section (7.2) is mainly intended to outline the possible direction of future research.

Gender is a linguistic feature associated with nouns of certain languages, especially Indo-European ones. In a language that has grammatical gender, a noun typically¹³ has one value for the gender feature. A noun can, for example, either be neuter, feminine or masculine. The process by which nouns are allotted to different genders is called GENDER ASSIGNMENT. Assignment may depend on two basic types of information about the noun: its meaning (semantics) and/or its form. Assignment based on the form/structure of nouns can either utilise morphological (derivational or inflectional) or phonological information or a combination of both. A great deal of grammatical gender assignment is also arbitrary, i.e. not based on either of these kinds of information.

The existence of gender can be demonstrated by agreement evidence. I will follow Corbett (1991: 4) in making agreement the defining criterion of gender, i.e. the gender of a noun must determine other forms beyond it. In other words, at least one other word in a sentence containing a gendered noun must AGREE with that noun in gender.

A few Indo-European languages have lost or abandoned the category of grammatical gender. English is among them, German is not. I will first discuss the remnants of gender in English before I sketch the German gender system.

7.2.1. The gender systems of English and German

7.2.1.1. English¹⁴

Modern English has a semantic system in which the meaning of the noun determines its gender. The main semantic rule is based on the sex of the referent. Nouns denoting males and females are generally masculine and feminine respectively. With non-human animates there is a high degree of variability. Domestic animals, particularly if they are named, are masculine or feminine according to sex. Anything else is neuter.

There are a few formal clues for gender assignment in English: nouns ending in *-woman* (e.g. *bar-woman*) or *-ess* (e.g. *waitress*) are generally female; nouns prefixed with *man* or *boy* are male (*manservant* m. and *boy-scout* m.). Corbett (1991: 12) furthermore discusses several cases in which the straightforward semantic rules of English are overridden by pragmatic factors, and cases of sociolinguistic variation, but they are not relevant to this study.

Pronouns present the only evidence for gender in English. Anaphoric or cataphoric reference by personal (*he/she/it*), possessive (*his/hers/its*) and reflexive (*himself/herself/itself*) pronouns is the only overt indicator of gender in English nowadays.

7.2.1.2. German

The situation in Modern German is far more complex. First of all, German has retained its extensive gender system with most¹⁵ German nouns being either masculine, feminine or neuter. Secondly, the meaning of a German noun is not sufficient to determine its gender. This perceived lack of transparency led Bloomfield (1933) to state

... the gender categories of most Indo-European languages ... do not agree with anything in the practical world there seems to be no practical criterion by which the gender of a noun in German, French, or Latin could be determined.

(Bloomfield 1933: 271, 281)

This view was so prevalent - even among linguists - that no attempts at finding systematic rules that determine gender assignment in German were made until the 1980s. The complexity of the German system is caused by the fact that, in addition to semantic criteria, German also uses morphological and phonological gender assignment rules. Köpcke and Zubin (Köpcke 1982, Köpcke & Zubin 1983, 1984; Zubin & Köpcke 1986; Köpcke & Zubin 1996) have made an excellent start at disentangling the complex gender system of German. The hypothesis underlying most of their work is diametrically opposed to Bloomfield's statement quoted above

Im Deutschen existieren zwischen Nomen und ihrer jeweiligen Genuszuweisung Korrelationen, die stark genug sind, um für den Sprecher des Deutschen als Basis für eine Hypothesenbildung bezüglich der korrekten Genuszuweisung dienen zu können. Sie können auf der phonetischen, morphologischen und semantischen Ebene angesiedelt sein.

(Köpcke & Zubin 1984: 28)

This assumption has important implications for gender assignment to non-German and pseudo-words. I will come back to this in the next section.

German uses different combinations of semantic, morphological and phonological factors and so far no conclusive statements can be made about the relative dominance of these principles. Furthermore, apart from gender assignment according to the sex of the referent, none of the principles guiding gender assignment in German discussed here and in the literature hold categorically. German also allows a considerable number of exceptions to gender assignment rules. Given the complex interplay of overlapping semantic, morphological and phonological factors guiding gender assignment in German, absolute gender assignment rules can barely be expected. A rule¹⁶ which assigns a portion of the nouns correctly, however, is of practical use and theoretical interest, both to the second language learner (cf. Durrell 1996) and to the linguist who is interested in theoretical issues such as the structure of the lexicon (Corbett 1991).

In the following paragraphs I give a brief outline of how gender assignment works in German. This discussion is largely based on Köpcke and Zubin's work (Köpcke 1982, Köpcke & Zubin 1983, 1984, 1996; Zubin & Köpcke 1986). I will start with semantic rules because a) formal assignment systems always seem to have a semantic core (Corbett 19991: 34) and b) the strongest similarities between the English and German gender systems are to be found among the semantic criteria.

As in English, the main semantic rule is based on the sex of the referent. Nouns denoting males and females are generally masculine and feminine respectively. This rule also holds for non-human animates, especially if they are domesticated and named (*die Henne*, f. 'hen' vs. *der Hahn*, m. 'cock'). Young animals and women are neuter (*das Küken*, n. 'chick'; *das Mädchen*, n. 'girl'). These semantic principles hold virtually categorically (with only a few pragmatic exceptions).

Köpcke & Zubin (1983, 1996) furthermore provide the following list of semantic fields that are associated with a particular gender. With the notable exception of *das Bier*, n. 'beer', **alcoholic drinks** are generally masculine in German (*der Wein*, m. 'wine', *der Whiskey*, m.), so are **rocks** and **minerals**, **calendar dates** (*der dritte Oktober*, m. 'the 3rd October') and **monetary units** (*der Schilling*, m.). **Cardinal numbers**, on the other hand, are assigned feminine gender (*die Eins*, f. 'one'). As in English, **aeroplanes**, **motor-bikes** and **ships** are feminine (*die Concorde*, f.). Many **fruits** are also feminine (*die Banane*, f. 'banana', *die Kirsche*, f. 'cherry', but *der Apfel*, m. 'apple'). **Chemical elements** and **metals** are almost always neuter in German (*das Eisen*, n. 'iron'), and so are **abstract units of measure** (*das Watt*, n. 'watt'), **colours** (*das Orange*, n. 'orange', *das Rot*, n. 'red'), **games** (*das Mensch-Ärgere-Dich-Nicht*, n. (a board game), and **languages** (*das Englische*, n. 'English', *das Deutsche*, n. 'German'). These are just a few semantic fields where gender assignment is reasonably consistent in German.

Köpcke and Zubin (1986) furthermore identified that nouns denoting super-ordinate categories (Rosch 1978) are usually neuter in German; terms on the basic level of a functional taxonomy, on the other hand, tend to have masculine or feminine gender. The super-ordinate term for musical instruments, i.e. *das Instrument* is neuter, the basic level

terms *die Geige* 'violin', *der Bass* 'double bass' are feminine and masculine respectively¹⁷. A related observation is that sex-associated genders (masculine and feminine) index greater semantic differentiation and more precisely defined semantic characteristics; neuter is associated with lesser differentiation and a corresponding absence of precise characteristics.

Köpcke and Zubin (1983) suggest that certain semantic fields have 'inner structure'. Their "Gestalt Principle" states that objects are distributed among the genders on the basis of their perceived gestalt. For example, gestalt terms that are perceived as long tend to be masculine (*der Stock*, m. 'stick'); objects that are flat and thin seem to be mainly feminine (*die Tafel*, f. 'blackboard'), and so are gestalt terms denoting sharp and pointed elements (*die Gabel*, f. 'fork').

Morphological principles can also be responsible for gender assignment in German. Derivational morphology is particularly prominent in this respect, and it is here that we also find overlap with semantic criteria, as in English. The derivational morpheme that changes an action verb into a noun denoting a person carrying out this action *-er* generally determines the gender of that noun as masculine (*der Läufer*, m. 'runn-er'). If we want to specify that the runner is of female sex, we add the suffix *-in* (*die Läuferin*, f. 'the female runner'). All German nouns ending in this derivational suffix are female, as are English nouns in *-ess*.

Germanic derivational suffixes that assign German nouns to a gender are¹⁸:

- *-ling* and *-rich* form masculine nouns (*der Liebl-ing*, m. 'darling', *der Wüte-rich*, m. 'hot-head').
- *-ung* (*-ing*), *-heit* (*-hood*), *-keit* (*-hood*), and *-schaft* (*-ship*) form abstract feminine nouns (*die Versicher-ung*, f. 'insurance', *die Verlegen-heit*, f. 'embarrassment', *die Heiter-keit*, f. 'joyfulness', *die Kund-schaft*, f. 'client').
- *-chen*, *-lein* and *-tum* assign nouns to the neuter gender. Zero-derivations from the infinitive form of verbs are also often neuter (*das Schwimmen*, n. 'swimming').

Non-native derivational suffixes with gender assigning properties are, for example, *-ment* (*das Firma-ment*, n.), *-ion* (*die Funktion*, f.) and *-ität* (*-ity*) (*die Elektrizität*, f. 'electricity').

In compounds and derived nouns, it is always the 'last element' which determines the gender of the word. Köpcke and Zubin (1994: 28) this rule 'Letzt-Glied-Prinzip' or 'Last Member Principle' (*die Eisen-stange*, f. 'iron bar').

In painstaking work Köpcke (1982) and Köpcke and Zubin (1984) also identified phonological rules for monosyllabic nouns that have an effect on gender assignment in German. Their first observation, which supports earlier work by Arndt (1970), is that monosyllabic nouns are more likely to be masculine than any other gender (64% are masculine). Each of these rules predict the gender of a noun fitting the phonetic pattern described with an above chance-level likelihood (between 64 and 68% of assignment to a particular gender). The cumulative effect of these rules, however, raises the predictive power of these phonological rules into the significant range: if a noun matches two patterns, they correctly predict the gender of that noun with a 72% chance; if three rules are combined, the success rate rises to 78%.

The phonological gender assignment principles identified by Köpcke & Zubin (1984: 24) are:

masculine

1. [kn_]
2. [d/t + r _]
3. [_ + K _]
4. [_ nasal + K]
5. [K (K) _ (K)K]

feminine

6. [_ (K) + fricative + t]
7. [u:/ ü: + r]
8. [_ e]

neuter

9. [_ et]

(K symbolises a consonant, round brackets symbolise optional element)

After reviewing gender assignment in English and German, I move onto gender assignment to borrowings and loanwords. I review some of the literature on this topic, and add to the list of assignment rules identified for monolingual use those that may be at play in contact situations to arrive at a comprehensive list of possible factors influencing gender assignment to borrowings and loanwords.

7.2.3. Gender assignment to borrowings and loanwords

When nouns are borrowed into a language with a gender system, they are allotted to a gender of that language in the vast majority of cases. This process allows us

- to test the psychological reality¹⁹ of gender assignment principles, and
- to observe assignment rules operating on material which is unlike that of the native vocabulary.

Once again I will assume the Null-Hypothesis for gender assignment, i.e. English borrowings are integrated into the German gender system by the normal assignment rules²⁰. Since the interaction between semantic, morphological and phonological rules in German is complex, it will be interesting to see whether evidence from gender assignment to English nouns throws any light on the relative ordering of these rules.

In language contact situations additional mechanisms for assigning borrowings to genders may of course be operative. Before I look at gender assignment in Emigranto, I will review some of the criteria proposed in the literature²¹.

Previous studies of gender assignment to borrowings and loanwords (Weinreich 1953, Haugen 1969, Poplack et. al. 1982), especially to English nouns in German (Clyne 1969, Arndt 1970, Carstensen 1980, Gregor 1983), identified the following factors as predominantly responsible for gender assignment²²:

1. The biological sex of the human (or in some cases animate) referent of the noun. This is a semantic rule of both the English and the German gender assignment systems and should therefore not be treated as a special but as a general principle. Poplack et. al. (1982: 25) found that this semantic factor approaches being categorical in their Spanish/English and French/English corpora. I expect similar results for the Emigranto corpus.
2. Phonological similarity²³, i.e. the identification of the phonological shape of the loanword with shapes in the host language requiring a certain gender. Again, this should not be treated as a special criterion for gender assignment in language contact situations but as an ordinary formal assignment rule. Spanish and also French have predominantly phonological systems. It is therefore not surprising that Poplack et. al. (1982) found a phonological effect on gender assignment in 70% of

the English nouns in Spanish. The 23% for the Montreal French corpus seem surprisingly low. Since phonological rules appear to be easily overridden by morphological and semantic ones in German, I do not expect a strong phonological effect in Emigranto. Furthermore, some of the rules identified by Köpcke & Zubin (1982) cannot apply to English nouns because English, for example, no longer has the word initial consonant cluster /kn-/ (Rule 1).

3. Semantic analogy and concept association. This principle is promoted by many researchers (Clyne 1968, Carstensen 1980, Gregor 1983) and is one that does not seem to play a role in monolingual gender assignment. Poplack et. al (1982) could assign 'analogical' gender to 84% of the borrowed nouns in the Spanish corpus, but to only 60% of the English nouns in the French corpus. This criterion ought to be treated carefully, however, because for most borrowings or loanwords there will be several candidates for host language semantic 'analogues' or associated concepts²⁴. It seems impossible for the researcher to identify which host language word the informant had in mind, or as Carstensen (1980: 57) puts it 'in der Mehrzahl dieser Fälle [ist es] sehr schwierig, dieses lexikalische Prinzip konsequent nachzuweisen'.
4. Suffixal analogy²⁵, or the association of a borrowed suffix with a host suffix requiring a certain gender, is a morphological criterion but considerably overlaps with phonological criteria (including syllabicity). Sankoff et. al. (1982: 19) find 'some effect' of suffixal analogy in their corpora. Suffixal analogy may not work for a large proportion of English nouns in Emigranto German. Where it can apply, however, I expect a quite strong effect because there is a strong relation between derivational affixes and gender assignment in monolingual German.

Other claims that borrowings are assigned to grammatical genders in ways that differ from normal assignment rules include

- graphemic analogy (Arndt 1970). Since there is an opaque relationship between the written and the spoken form of words in English, and since there is no way of establishing whether my informants know the written form of the word or not, this possibility will not be investigated.
- two approaches which assign borrowings to a particular gender by virtue of their being loanwords (Heine 1968 and Haugen 1969²⁶). This approach assumes that borrowings have a special psycholinguistic status, which is unlikely in language contact situations.

This possibility will also not be investigated.

- the gender of the noun in the donor language (Thomas 1983). Since there is considerable overlap between the semantic assignment rules for sex-differentiable nouns in English and German, and because neuter clearly does not function as a 'unmarked' gender for English loanwords, this suggestion will also not be pursued.

7.2.4. The assumptions

The Null-hypothesis states that words borrowed into German from other languages, English in this case, get assigned gender by the same semantic, morphological and phonological principles that are operative in monolingual German. I therefore expect to find that

- only the phonological and morphological shape of the English nouns and their meaning can influence the gender they get assigned to. As German has a mixed system, it will be interesting to see which of the three assignment systems exerts the strongest influence on English nouns in Emigranto.
- the sex of the human/animate referent will determine the gender of the noun referring to this referent almost categorically
- less categorically I also anticipate English nouns from the semantic fields analysed by Köpcke and Zubin (1996) to be allocated to the same grammatical gender as their German counterparts
- if 'inner structures' (Köpcke and Zubin 1983) are psychologically real, I expect them to determine gender assignment to English borrowings in Emigranto, as the semantic properties determining 'inner structure' must be shared by nouns in both languages
- if superordinate terms are predominantly neuter (Köpcke and Zubin 1993), this rule should also be operative on English nouns in Emigranto.
- morphologically complex polysyllabic words derived from lemmas by means of affixes that are productive in both languages will be assigned to the gender the affix assigns in German; this principle is expected to be operative even if the morphological and phonological shape of these affixes is not completely identical in English and German.
- monosyllabic words (especially when they have consonant clusters in onset and coda) will be masculine rather than any of the other two genders (by about 60%).

- out of the eight phonological rules formulated by Köpcke & Zubin (1983), rules two [d/t + r ____], four [____ nasal + K], five [KK ____ KK], six [____ (K) + fricative + t], and nine [____ et] can operate on English nouns. Rules two, four and five assign masculine, six feminine and nine neuter gender. All these rules are expected to be operative unless they are overridden by semantic or morphological rules.

Before I move onto the empirical study I would like to make one more general remark: despite suggestions to the contrary (Arndt 1970, Beardsmore 1971), differences in gender assignment to borrowings and loanwords are not due to social or stylistic differences (Carstensen 1980, Poplack et. al. 1982). There are, however, differences in gender assignment between various German dialects. This variation, however, mainly affects borrowings and loanwords that can be used with two genders in German. The best-known example is *Match*, which can either be *der* or *das Match* in German German. In Austria it can only be neuter.

7.2.5. Empirical analysis

As stated at the beginning of this chapter, I will follow Corbett (1991) in using agreement as the defining criterion for gender in the following analysis. Word classes that can show gender agreement in German are articles, pronouns and adjectives (including ordinal numbers). The core corpus contains 380 English nouns that could potentially have been assigned to a German grammatical gender. The gender of 131²⁷ English nouns could be unequivocally established by agreement evidence²⁸. These 131 tokens belong to 79 types, 29 of which occur more than once. This is an advantage, since their gender could be established with some degree of certainty without conducting additional psycholinguistic experiments. 27 tokens are loanwords and therefore listed in the Duden Fremdwörterwuch²⁹(DFW). The gender they receive in my corpus corresponds to the one listed in the DFW in all but one case; *Singelton* is listed as masculine in the DFW but yields two feminine tokens in the data. After this general survey I will proceed to testing the semantic, morphological and phonological principles that determine gender assignment in the Emigranto corpus.

7.2.5.1. Semantic assignment principles

English common nouns referring to humans are categorically assigned a gender according to the sex of the referent in Emigranto. There are six unequivocal cases of English common nouns allotted to masculine or feminine gender according to this semantic rule. For feminine gender they are: *die nanny* f. (lBron line 1035) and *die nurse* f. in

*DOR: und die hatten keine **nurse**, die xxx +...

lbron.cha, line 1010

In the above example both the indefinite article *kein-e* and the relative subordinator *die* agree with the feminine noun *nurse*. *Nurse* is also listed as feminine in the DFW. It is not surprising that the loan-blend *die bridge-dame* (Jen1 l. 1319) is feminine, since the last gender determining element is a German feminine noun with a female referent.

In English, most proper nouns do not require a determiner. Those that do, require the specific determiner. The same holds true for German, however, there are many more names that have a definite article AND especially in colloquial speech, a definite article is frequent with personal names. The following example illustrates this in an ungrammatically extraposed direct object. The head of the noun phrase in Jen1.cha, line 1999, *woman*, is co-referential with the female name in the previous utterance; the adjective, *dick-e*, agrees with it in gender.

TRU: wie ich jetzt in Wien war , hab(e) ich wieder g(e)sehen [] die Lwww Ewww .

*TRU: dick-e **middle aged woman now**.

Jen1.cha, lines 1998ff.

Fourteen determiners in the core corpus agree with female personal names, nineteen with male personal names.

The unequivocal³⁰ examples for masculine gender assignment to common nouns in the core corpus are: *der husband* (2 tokens, Jen1.cha, line 1379 & Jen2.cha, line 2089), *der Irishman* (2 tokens, Jen1.cha, lines 289ff.), *der caretaker* (1 token, Jen1.cha, line 73) and *der boyfriend* in

*LIL: (1)den hat sie doch schon zehn jahr(e) , den **boy+friend** +...

Jen1.cha, line 1483

Thus all nouns for people have a gender determined by the referent's sex. The only English noun with a human referent that is neuter in the corpus is *das baby* (Jen3.cha, line 1607). This is in line with both English and German semantic rules, both of which assign neuter gender to the young of humans.

All names of venues (7 tokens) in the Emigranto corpus were allotted to the neuter gender, one example of which is

*TRU: in (da)s **Odeon** ?

Jen1.cha, line 1985

All nouns designating appointed sites or buildings that serve a particular purpose are also neuter in the core corpus, compare *das mental home* (lbron.cha, line 604), *das hostel* (lbron.cha, line 1393), *das hospital* (Jen3.cha, line 2452), *das prison* (Jen3.cha, line 1617), *das Austrian Centre* (2 tokens, Jen3.cha, lines 162 & 776), *das Austrian Institute* (Jen3.cha, line 320), *das University College London* (2 tokens Jen1.cha, lines 532 & 573), and *das Brighton Polytechnic* (Jen 2.cha, line 538). This semantic field has, to my knowledge, not been discussed in the literature so far. Some, but not all, semantic analogues of the above English words are also neuter in German. *Mental home*, for example, could either be *das Ireenhaus*, n., or *die Nervenheilanstalt*, f. *Hostel* in this particular context, however, can only be *die Herberge*, f. All other translation equivalents are neuter. Possibly appointed sites form a semantic field the members of which are predominately neuter³¹. In German, many names for venues are formed by compounding the nouns designating the purpose the site serves with *-gebäude*, *-haus*, *-zentrum*, compare *Vereins-gebäude*, *Konzert-haus*, *Konferenz-zentrum*. All 'last members' of these compounds are neuter. This compounding process may have established a strong link between venues and the neuter gender in German and this association is also applied to English borrowings in the Emigranto corpus.

As far as semantic fields that are closely linked with certain genders in German are concerned, the corpus does not yield any English borrowings designating rocks, minerals, alcoholic drinks, calendar dates or cardinal numbers, all of which are more likely to be masculine than any other gender. The semantic field of waste is also

associated with masculine gender according to Köpcke and Zubin (1983) and *rubbish* is assigned masculine gender in the data.

*TRU: Oich Ohabe genau den selben **rubbish** wie frueher. Jen1.cha, line 1987

The corpus also does not contain English terms for fruit, which are predominately feminine in German. As in English, ships, aeroplanes, cars and motorbikes are frequently feminine in German and the corpus contains one example which completely contradicts my intuition as a German native speaker about gender assignment, but is in line with the above rule. I would assign masculine gender to *lorry* but my informants use feminine.

*MEL: +, sie is(t) ueberfahren worden # ... # von einer **lorry**. Jen3.cha, line 1608

The corpus furthermore does not provide any integrated English borrowings for chemical elements, metals, abstract units of measure, colours or languages, which are associated with the neuter gender in German. The semantic field of games is also predominantly neuter in German. *Quiz*, a well established loanword in German, is assigned neuter 4 times (IBron line 1238, Jen1 lines 591, 702 and 711) in the corpus

*MEL: [!] dort [/] wenn wir ein **quiz** haben -? .

Jen1.cha, line 702

and masculine only once with a hesitation pause before the determiner, indicating production difficulties on part of the speaker. The DFW also lists *quiz* as neuter.

The super-ordinate term *game* is assigned neuter twice in the corpus. See

*TRU: schweres **game** war das jetzt. Jen1.cha, line 2329

*TRU: also a [:ein] neues **game**. Jen1.cha, line 2422

Super-ordinates, according to Köpcke and Zubin (1993), have a strong tendency to be neuter in German. *Game*, furthermore, is less specific, less semantically differentiated than *quiz*, for example, and lacks precise semantic characteristics³². This, according to Köpcke and Zubin (1993), provides further support for the choice of neuter gender for *game*. All other English terms for games remain unintegrated in the corpus.

I found little evidence for Köpcke and Zubin's (1993) 'gestalt principle'³³ apart from possibly *die ball-pen* being feminine because it is a pointed object like *die Gabel*.

*DOR: wie sagen sie zu der **ball+pen**?

lbron.cha, line 331

A *counter* is a flat and rather thin object and should therefore be feminine, too. This English noun, however, gets assigned masculine twice (lBron lines 371 and 407) in my corpus. Morphological criteria may override semantic ones in this case. I will come back to nouns in *-er* in the section on morphological assignment principles.

One semantic field that yields a considerable number of tokens in the corpus is place names. Köpcke and Zubin (1996) have not dealt with this semantic field but analysed 'bodies of water' and found that enclosed bodies of water tend to be masculine (compare *der See*, m. 'lake'), whereas open bodies of water tend to be feminine (compare *die See*, f. 'sea'). The core corpus contains three tokens of *district* (lbron.cha, line 1162, Jen1.cha, lines 1582 and 1585), all of which are masculine;

*EVA: na der **district** war ok.

lBron.cha, line 1582

so are *der Belsize Square* (lBron.cha, line 926) and *der mental ward* (lbron.cha, line 1017), all of which are more or less enclosed areas. Streets (Jen3.cha, line 337), roads (Jen2.cha, lines 54 and 2256) and avenues (Jen3.cha, line 463), which are more open, are all feminine.

*TRU: er ist doch von der **Green Street** gekommen.

Jen3.cha, line 337

In summary we can say that in those areas where there is considerable overlap between gender assignment in English and German, i.e. when the biological sex of the referent determines the gender of the noun, the semantic rules are categorically supported (possibly with one pragmatically motivated exception³⁴). Where the corpus yields tokens for semantic fields analysed by Köpcke and Zubin (1983), they also support these researchers' findings. 'Inner structure groups' are supported by gender assignment

according to the sex of the referent, downgrading³⁵ and the gestalt principle. The enclosed - open continuum may be supported by the incorporation of enclosed places into masculine, and more open 'places' into feminine gender. Other groups cannot be backed up with evidence from English borrowings in the Emigranto corpus, because there are no or not enough examples.

7.2.5.2. Morphological assignment principles

I will now move on to morphological gender assignment principles. Certain derivational affixes are strongly associated with a certain gender in German. Most affixes listed by Köpcke and Zubin (1983)³⁶ are productive in German derivational processes but not in English. The Germanic derivational suffix *-er* which forms de-nominal and de-verbal nouns, is productive in both languages. De-verbal derivatives are agent nouns with the meaning 'animate or inanimate substantive denoting the performer of an action' (Marchand 1969: 273). Nouns ending in this suffix are masculine in German, and without gender specification frequently get interpreted as masculine in English, too. The Viennese semantic analogue to *caretaker*, i.e. *Hausmeister*, for example, is masculine.

*MEL: wer is(t) Joseph ?

*DOR: der haus+xxx .

*MEL: ++ der **care+taker**.

Jen1.cha, line 73

The corpus yields five tokens where the derivational process is still relatively transparent: *der freez-er* (Jen1.cha, line 2511), *der joker* (the playing card, 4 tokens, Jen3.cha, lines 1874, 2512, 2580, 2593), *der computer* (3 tokens, Jen2.cha, lines 700, 706, 729) and *der counter* (lbron.cha, lines 371 and 497).

*TRU: na der **computer** weiss (e)s noch nicht.

Jen2.cha, line 700

In the discussion of semantic assignment principles I pointed out that according to its gestalt, *counter* ought to be feminine (because it is flat and thin like a board, compare *die Platte*, f.). The morphological principle assigning masculine gender to nouns in *-er* thus seems to override the semantic gestalt principle, at least in this case.

The strong association between this suffix and masculine gender seems to spread gender assignment to nouns simply ending in *-er*, which is quite strange as the /r/ is not pronounced in English. *Der corner* (Jen1.cha, line 275), however, also gets assigned masculine gender in the Emigranto corpus, although *-er* is not a derivational suffix in this case.

*DOR: bei dem **corner**,, ja.

Jen1.cha, line 275

This phenomenon has been noted by several other researchers (Arndt 1970, Carstensen 1980, Gregor 1983 and Mills 1986). It cannot be regarded as categorical, however, since my corpus also provides the following example in which *die drawer* is feminine.

*MEL: (1)den kalender ,, den hab(e) ich noch in der # **drawer**. Jen1.cha, line 190

Die drawer also violates the phonological rule that nouns with alveolar plosives + /r/ in the onset tend to be masculine. The pause before the borrowing, however, indicates lexical access difficulties and suggests that semantic analogy/concept association with *die Schublade*, f. may have been responsible for gender assignment in this case.

Both English and German borrowed many derivational suffixes from Latin and French. As predicted, and as established by previous research (Arndt 1970, Carstensen 1980, Gregor 1983 and Mills 1986), 'English' nouns ending in etymologically Latin or French suffixes that are also productive in German (in a phonologically similar shape) are assigned the same gender as German nouns ending in these suffixes. Illustrating examples are *die mentality* (lbron.cha, lines 223 & 805), *die personality*³⁷ (Jen1.cha, line 2388); *die production* (Jen1.cha, line 1281), *die reunion* (3 tokens, Jen3.cha, lines 142, 160 & 177), *die operation* (3 tokens, Jen2.cha, lines 2092 & 2418, Jen3 line 167), *die concentration* (Jen2.cha, line 854) and *die station* (Jen3.cha, line 278) for feminine assigning *-ity* ~ *-ität* and *-ion*.

*DOR: **you know**,, wir haben die selbe # ahm nicht nur die sprache die selbe **mentality**.

lbron.cha, line 223

*MEL: ja er muss ins spital fuer diese **prostate gland operation**. Jen2.cha, line 2092

This principle operates categorically in the Emigranto corpus.

Past research (Arndt 1970) associated English *-y*³⁸ with German *-ie*, and therefore assumed that English borrowings ending in *-y* would be feminine. This association may be problematic for two reasons: first, English *-y* ethymologically corresponds to German *-i* as in *Mammi*, *Hansi* (Marchand 1969: 298) and not *-ie*; second, it is only French loanwords in *-ie* that are feminine in German and the minority of English words ending in *-y* are derived from French. English borrowings/loanwords ending in *-y* are allocated to all three genders in Emigranto. *Der trolley* (Jen1 line 479) is masculine;

*TRU: kannst du den **trolley** den huegel rauf ... ? Jen1.cha, line 479

die company (lbron.cha, line 1220), *die kitty* (3 tokens, Jen1.cha, line 888, Jen2.cha, lines 1632, 1635, 1636) and *die lorry* (Jen3.cha, line 1608) are feminine;

*DOR: wir zahlen sechs **penny** in die **kitty**. Jen1.cha, line 888

and *das telly* (4 tokens, Jen1.cha, lines 2005 & 2700, Jen2.cha, lines 2703 & 1709) and *das gravy* (2 tokens, Jen3.cha, lines 1756f.) are neuter.

*TRU: wir haben g(e)sagt , wir wollen den # **sliced** +...

*LIL: +, und kein **gravy**. Jen3.cha, line 1756

I originally thought that *-y* could be associated with the diminutive. Since all German nouns ending in diminutive suffixes are neuter, I expected more English nouns to be assigned to this gender. As borrowings are fairly evenly distributed among the three genders, this idea has to be rejected although *telly* is of course an abbreviation and *kitty*, *lorry* and *trolley* are all of doubtful etymological origin, derived from uncertain stems with a *-y* added to them.

Past research (Carstensen 1980, Gregor 1983) furthermore associates gerundival *-ing* with German *-en*, the suffix with which neuter nominalized infinitives end³⁹, leading to the assumption that borrowed English gerunds will be neuter. /en/ and the most frequent

casual pronunciation of -ing as /in/ are also phonetically similar. Historically *-ing* is furthermore derived from Old English *-ing*. The association of English gerunds with German nominalized infinitives, however, requires a considerable amount of linguistic analysis on behalf of the speakers. Whether this is possible in an automatic process like gender assignment to borrowings has to be left open. As the Emigranto corpus yields *das storm-setting* (Jen2.cha, line 2072) and the literature (Carstensen 1980, Gregor 1983) lists several examples of English neuter gerunds, it seems possible that English gerunds become associated with the neuter gender because of their association with German de-verbal nouns in *-en*.

Storm-setting also illustrates a morphological process which operates categorically in Emigranto as in other corpora (Arndt 1970, Carstensen 1980): the Last Member Principle. *Storm* is attested as masculine in several corpora, and words to name regular, strong wind are always masculine according to Köpcke and Zubin (1983). So it must be *das setting* which determines the gender of this compound. Other examples illustrating the Last Member Principle are, for example, *die hip-operation*⁴⁰ (Jen3.cha, line 167), *das pigs-eye* (Jen2.cha, line 2726), and *die u-shape*⁴¹ (Jen1.cha, line 658).

7.2.5.3. Phonological assignment principles

Finally, I will deal with phonological rules. A relationship between syllabicity and gender was first suggested on the basis of English loanwords in German by Arndt (1970). This link was confirmed by Carstensen (1980), and for monolingual data by Köpcke & Zubin (1982). Evidence from various different sources suggests this is a robust finding. My corpus, however, does not support it. In the Emigranto corpus only 40% of monosyllabic English nouns are assigned to the masculine gender, in comparison with over 60% in most other corpora.

Out of the eight phonological rules formulated by Köpcke & Zubin (1982 & 1983) five can apply to English nouns. The other three contain phonemes or phoneme combinations that are not (or no longer) in use in English. Rule 2, which associates words with initial alveolar plosives plus /r/ with masculine gender, is supported by *trouble* being assigned masculine twice in the corpus, once in

*TRU: ja # das is(t) ja der **trouble** +...

Jen3.cha, line 945

and once as the last element in a compound *der skin-trouble* (Jen3.cha, line 2004). I have already mentioned the counterexample to this rule from the Emigranto corpus, i.e. *die drawer* (Jen1.cha, line 190).

Rule 4 specifies that nouns with word final nasal plus consonant also tend to be masculine. Seven tokens of *der accent* (lbron.cha, lines 1349, 1352, 1363, 1398, Jen1.cha, line 1180 & Jen3.cha, line 1493) support this rule;

*DOR: **and** alle haben wir so einen **accent** # 0als moechten wir gerade von Oesterreich gekommen sein .

lbron.cha, line 101

Die grant (lbron.cha, line 67) contradicts Rule 4 but this may be an idiosyncratic gender assignment by speaker *EVA. *Grant* is not listed in the DFW.

The more general rule (No. 5) that words with word initial and final consonants or consonant clusters tend to be masculine is backed up by more examples in the Emigranto corpus: *der stroke* (Jen2.cha, line 136), *der spray* (Jen3.cha, line 2013), *der club* (lbron.cha, line 129), *der exit* (Jen3.cha, line 1489), *der check* (Jen1.cha, line 438), and *der jack* (Jen2.cha, line 2601),.

*DOR: die hat den [/] den **spray** # hat sie ganz gekrustet #
und die kruste muss herunterkommen .

Jen3.cha, line 2013

Phonological rule No. 6 states that there is a strong tendency for nouns ending in fricative + /t/ to be feminine. The example *die list* (Jen2.cha, line 2110) provides evidence for the validity of this rule.

*DOR: sollen sie herkommen damit sie wissen , was eine **waiting+list** is(t).

Jen2.cha, line 2110

Finally, the rule that assigns neuter gender to German nouns is formulated as [__ et]. *Das ticket* (Jen1.cha, line 509) and two tokens of *das set* (Jen2.cha, line 126 & Jen3.cha, line 3055) back this rule.

*MEL: ich hab(e) nicht /ein set.

Jen3.cha, line 3055

In summary we can say that there is some evidence in support of phonological gender assignment principles in the Emigranto corpus. The most robust of these, however, is not supported, i.e. approx. 20% fewer monosyllabic English nouns are masculine in my corpus than in much more substantial mono- and bilingual (German/English) mixed corpora. This finding may be an artefact of the rather small corpus. The phonological rules, when they can apply, are largely supported by tokens from the Emigranto corpus, although there are a few exceptions.

The null-hypothesis, i.e. that words borrowed into German get assigned gender by the same semantic, morphological and phonological principles that are operative in monolingual German, is supported by the Emigranto data. Evidence in support of all principles suggested by Köpcke and Zubin (1982, 1983, 1996) has been found in the Emigranto data. For 44 (56%) of the 79 types of English borrowings or loanwords in the data, a semantic, morphological or phonological principle (or a combination thereof) could be identified as a likely causal factor in gender assignment. Table 1 summarises the results

	Masculine	Feminine	Neuter
Semantic assignment			
sex of the referent			
Common nouns	6	6	1
Proper nouns	19	14	13
Semantic fields			
Ships etc.	-	1	-
Waste	1	-	-
Games	-	-	4
Super-ordinate concepts	-	-	2
Gestalt principle	-	1	-
Continua	5	4	-
Morphological assignment			
Derivational morphology	7	12	-
Last member principle	5	8	9
Phonological assignment			
Rules	14	1	3

Table 1. Gender assignment to English nouns (tokens)

Table 1 also illustrates that semantic rules take precedence over morphological and phonological ones.

It seems safe to assume that the phonological, morphological and semantic similarity of English nouns to German ones will influence gender assignment. This also holds true for words that were borrowed into both languages from the same source language (Latin in most cases), e.g. English *accent*, German *Akzent*; English *mentality*, German *Mentalität*; English *hospital*, German *Hospital*; English *microphone*, German *Mikrophon*.

7.2.5.4. Special assignment principles

Semantic analogy and concept association can definitely not account for the remaining 11% of the data (9 tokens): the closest semantic analogue for *die beach* f., one would assume, is *der Strand*, m. *Beach* also get assigned feminine gender in Australian German (Clyne 1969⁴²). Despite the strong association of *farm* with *der Bauernhof* m., both Clyne's and my informants assign *farm* to the feminine gender.

....if der Vater hat keine farm (Clyne 1987: 251)

*DOR: und war sie dort in einer farm.

Ibron.cha, line 1387

Other examples where I would rule out semantic analogy and concept association as possible factors in gender assignment are *der corner*⁴³ m. (compare *die Ecke* f., *die Kurve* f.); *die lorry*⁴⁴, f. (compare *der Lastwagen*, m.), *der do* (compare *die Feier* f., *die Party* f., *die Veranstaltung* f.), *die grant* (compare *das Stipendium*, n.), and *die value* f., which can only be associated with *der Wert*, m. in

*DOR: **because** wenn du es verkaufst [/ -] also die value vom haus sinkt doch,,
net [: nicht] ?

Jen1.cha, line1516

In the introductory section I cautioned against the principle of semantic analogy/concept association, because for many words there are several candidates for host language semantic analogues or associated concepts. The following example illustrates how difficult it is for the researcher to identify the host language word the informant had in mind. The 'obvious' translation equivalent for *mentality* would surely be *Mentalität*.

*DOR: die mentality [/] die anschauung #

lbron.cha, line 805

When testing semantic analogy/concept association, I therefore took a conservative approach and always chose the word with the gender to which the borrowing was assigned in my data. For example, the translation equivalent for *die ball-pen* f. is *der Kugelschreiber* m. The last element of the borrowed compound, however, is *pen*. I therefore took *die Feder* f. as the concept associated with *die ball-pen* f. Since semantic, morphological and phonological principles can account for 56% (44 tokens) of the data and semantic analogy with a German noun can be ruled out for 11% (9 tokens) of the data, the gender of only 33%⁴⁵ (26 tokens) of the data can be best accounted for by semantic analogy/concept association.

There is clearly no default gender to which English borrowings and loanwords are assigned in the Emigranto corpus, as Heine (1968) and Haugen (1969) had proposed: 30% of gender assigned English nouns in Emigranto are masculine, 40% feminine and another 30% neuter⁴⁶.

The gender of the donor language word can only affect nouns denoting humans. I have already shown in the section on semantic gender assignment principles that natural gender holds categorically.

In the introductory section I mentioned differences in gender assignment between various German dialects. Carstensen (19080: 42) identifies *service* as a word that gets assigned to the masculine gender in Germany but to neuter in Austria. The following example shows that Emigranto works on Austrian gender assignment principles.

*MEL: wenn das **national+health+service** ihn nicht nimmt, muss er sich das privat
machen lassen +...

Jen2.cha, line 2094

This Section (7.2) has shown that the Null-hypothesis, i.e. words borrowed into German from other languages, English in this case, get assigned gender by the same semantic, morphological and phonological principles that are operative in monolingual German,

makes better predictions than gender assignment principles specific to borrowings and/or loanwords.

¹ A shorter version of this chapter is to appear in the next issue of the *International Journal of Bilingualism* (Volume 8, Number 2, 2004).

² Exceptions to this rule are extraposition and double-infinitive constructions.

³ Default inheritance rules apply to the few English constructions in which the complement comes before the head.

⁴ The term "late" was chosen instead of "final" because finite dependent auxiliaries in double infinitive constructions can be followed by their non-finite dependents; cf. endnote 1.

⁵ Support for this analysis comes from the fact that German subordinate clauses lacking a subordinator/complementizer are V2 (or verb initial). Cf.

Sie sagte, sie kennen Doris vs. *Sie sagte, daß sie Doris kennen*
She said they know Doris She said that they Doris know

According to G3, it is only subordinators/complementizers that select "late" finite verbs. So if a verb depends directly on another verb (*kennen* directly depending on *sagte* and not *daß*) the default rule need not be overridden.

⁶ See for example Clyne (1987), Gardner-Chloros (1984), Salmons (1990), Treffers-Daller (1994).

⁷ Examples (9) is an incomplete subordinate clauses. This does not effect the analysis because the word order position of the relevant finite dependent verb is clear.

⁸ Since all 'Emigranto' informants are Viennese, I only used examples from the 10 Viennese informants for the Brigham Young Corpus (BYU) corpus. Farrar (1998) counted all occurrences of *weil* in the speakers of southern German dialects from the BYU corpus. Schlobinski's (1992) data are standard Bavarian; and the Uhmman (1998) corpus is 'alemannisch-bairisch'.

⁹ Lehmann (1988) suggests that for clauses that are linked in a relationship of sociation rather than dependency, 'paratixis' is a more appropriate term than 'coordination'.

¹⁰ Two clauses (X and Y) have been defined as being in a subordination relationship 'iff X and Y form an endocentric construction with Y as the head' (Lehmann 1988: 182).

¹¹ Note that in the English literature, Rutherford (1970) and Thorne (1986), the comma intonation is assumed to precede the conjunction. Schleppegrell (1991: 333) mentions the possibility of *because* followed by a pause.

¹² Note that the most frequently borrowed subordinator in Brussels Dutch is *tandis que*.

Treffers-Daller (1994: 191) observes that the Dutch equivalent of *tandis que*, *terwijl*, is rarely used in her corpus. In those cases that do occur, the Dutch conjunction is followed by the Dutch complementizer *dat*. Like *weil* in Pennsylvania German, Brussels Dutch *terwijl* may also have lost the subordinate feature and requires an 'obvious' complementizer to trigger verb final placement.

¹³ Nouns that have more than one value for the gender feature are called 'hybrids'. They will be discussed later in this chapter.

¹⁴ Because the only evidence for a gender system in English is provided by pronouns according to the definition adopted, some researchers claim that English does not have gender (Hudson 1990); others count English among the languages with a pronominal gender system (Corbett 1991).

¹⁵ Approximately 10% of German nouns can be used with two genders (Köpcke & Zubin 1996).

¹⁶ However, as Mel'cuk's (1958 [1974: 33]) pointed out, rules are valuable, even if there are exceptions.

¹⁷ Notable exceptions to the principle that assigns basic level categories to the masculine or feminine genders are, for example, *das Cello*, n. 'cello', *das Klavier*, n.

¹⁸ Corresponding English suffixes, where they exist, are given in brackets.

¹⁹ Further evidence for the psychological reality of gender assignment system comes from language acquisition (Mills 1986), psycholinguistic experiments (Carsten 1980, Köpcke & Zubin 1986, Mills 1986), and language change.

²⁰ In an early study based on English loanwords in German, Arndt (1950) arrived at some of the regularities underlying the German assignment system identified by Köpcke and Zubin (1996). Zinder (1959) furthermore assumed that 'starke und einheitliche Prinzipien' have to be operative in gender assignment to English nouns because they are not accompanied by hesitation phenomena and their gender is generally not variable.

²¹ I agree with Corbett's (1991: 71) assessment of some of the literature on the gender of borrowings: it is of little value, since many authors try to explain the gender of individual words without relating them to the overall system. Other studies are based on psycholinguistic assumptions about bilingual production that are no longer tenable Gregor (1983: 41ff.)

²² The list is partly based on Poplack et. al. (1982) and Corbett (1991).

²³ Phonological similarity forms part of Grefor's (1983) "Entlehnungsprinzip"; Clyne (1969: 21) calls this criterion "Reimanalogies nach Gattungs- und Eigennamen" and lists it as the first principle (although it is not clear whether this chronology implies a hierarchy of importance or not).

²⁴ I am not sure the use of the term "concept" is helpful in this respect because it is not certain that concepts at the conceptual level of speech production do have gender.

²⁵ This principle assumes that bilingual speakers can analyse morphologically complex words and use suffixal analogy as a morphological rule; less fluent bilinguals may base gender assignment more on the phonological similarity of word endings.

²⁶ Haugen (1969) assigns borrowings and loanwords to the 'unmarked' gender of the host language.

²⁷ Four non-overt tokens are included in this figure. They are included in the analysis because they could be identified from the context and because their gender could be established by agreement evidence.

²⁸ The definition for gender adopted for this study automatically excludes certain nouns from the analysis, e.g. plural nouns and examples where gender and case marking are confounded. If no agreement evidence was available, English nouns in otherwise German contexts were excluded from the study. These also include morphologically unintegrated nouns.

²⁹ 22 out of these 27 tokens have entered the German language via British or American English. The remaining 5 tokens are of Latin or French origin and entered both English and German form there.

³⁰ Possibly there are three more: *der cook* (Jen1 line 1338), *der receptionist* (Jen3. line 214) and *toy-boy* (Jen1 line 1892), see footnote ???).

³¹ If this is the case, then there are clearly exceptions in German, compare *die Oper* f., *die Schule*, f. but *das Opernhaus* n., *das Schulhaus* n.

³² The gender of *something* in the following two examples can either be masculine or neuter.

*DOR: na dann gib ihm ein little something. Jen1.cha, line 2517

*TRU: was is(t) a [: ein] little something? Jen1.ch, line 1519

Because *little something* lacks precise characteristics and imageability, chances are that neuter is the correct gender. Two informants from the same community independently confirm this native speaker intuition.

³³ This principle states that gender assignment reflects a distribution of objects on the basis of their perceived gestalt; e.g. long objects tend to be masculine, flat, pointed and hollow objects, on the other hand, tend to be feminine.

³⁴ *TRU: a [? ein] **toy+boy**? na [: nein] des [: das] brauch(e) ich net [: nicht] . Jen1.cha, line 1892

This example is not included in the main analysis because we cannot be sure that *toy-boy* is assigned neuter (evidence for neuter gender is the demonstrative pronoun *das*; *das* may refer to the situation of having a toy-boy, rather than to the toy-boy himself). Gender can be pragmatically used to downgrade humans in both English (Corbett 1991) and German (Köpcke & Zubin 1996).

³⁵ See footnote 22.

³⁶ Köpcke and Zubin (1983) list *-ing* and *-rich* as assigning masculine, *-ung*, *-heit*, and *-keit* as feminine, and *ge-*, *-tum* and the diminutive suffixes *-chen* and *-lein* as neuter.

³⁷ Feminine gender for *mentality* and *personality* may furthermore be supported by the semantic affect continuum. Köpcke & Zubin (1983) found that nouns denoting affect that is directed out of the individual (extroversion) tend to be masculine, compare *der Ärger* 'annoyance', whereas nouns expressing introversion tend to be feminine, compare *die Angst* 'anxiety'. I would locate *mentality* and *personality* towards the introversion end of the scale.

³⁸ Marchand (1969: 298) calls English *-i.e.*, *-y* a hypocritical suffix which is either attached to the full noun or to a shortened or endearingly modified form of a name.

³⁹ Note that these nominalisations are zero-derivations from the infinitive, and zero-derivations from verbs are frequently neuter in German.

⁴⁰ with *operation* being feminine because of suffixal analogy;

⁴¹ with *eye* and *shape* possibly receiving their respective genders (neuter and feminine) through semantic analogy and/or concept association with *das Auge* n. and *die Form*, f.

⁴² Clyne (1969: 219) comments 'Ganz erstaunlich war der fast einheitliche Gebrauch von *die beach*, trotz des maskulinen Geschlechts des am nächsten stehenden deutschen Wortes *Strand*'.

⁴³ As stated in the section on morphology, the pseudo-morpheme *-er* may account for the masculine gender of this example.

⁴⁴ As stated in the section on semantic fields, the membership of *lorry* in the semantic field of ships, cars and motorbikes may account for the feminine gender of this example.

⁴⁵ This figure may be even lower if I add the 10 borrowings in the corpus for which I had deliberately chosen the semantic analogue/associated concept that is matching the gender the English noun was associated with in my corpus. Based on this more conservative count, analogical gender can account for 76% of the data.

⁴⁶ In Arndt's (1970: 251) study 50% of loanwords were feminine, 35% masculine and 15% neuter.

8. Conclusion

This thesis has investigated the syntax of a group of German/English bilinguals' monolingual and intra-sententially code-switched utterances.

For language interaction research like this thesis, the LIDES transcription, coding and automatic analysis system is a major methodological advance because

- it can provide the necessary background information about the distribution of languages, the frequency of mixed utterances and code-switches in the corpus and among individual speakers. These frequency data produced the first, purely sociolinguistic result, i.e. that even in a close-knit network of speakers, bilingual speech is individualistic, but the frequency of mixed utterances and code-switches in mixed utterances is not significantly different. It is furthermore possible to identify in-and out-group membership on the basis of these data.
- it can automatically generate the code-switched corpus, i.e. the corpus of all intra-sententially mixed utterances.
- it provides support for the claim that homophonous diamorphs, cognates and speech editing phenomena (like hesitations, repetitions and retracings/false starts) facilitate code-switching (Clyne 1987, Muysken 1987, and Treffers-Daller 1994) by computing the numbers for these elements in monolingual and mixed utterances. The number of homophonous diamorphs, cognates and editing phenomena has been found to be significantly higher in code-mixed utterances.
- it has supported and strengthened the qualitative analysis of *because* and *weil* clauses by providing, first, the contextual information necessary for the pragmatic analysis of these clauses, and second, access to the intonational contours of these clauses via the transcriptions and audio links.

Word Grammar has been shown to be a suitable syntactic theory for the analysis of monolingual and mixed utterances alike because it

- can generate representations of actual utterances (not just idealised sentences). All the words in an utterance that can be linked by syntactic dependency relations constitute sentences, therefore natural speech data do not have to be edited prior to a WG analysis.
- facilitates a comprehensive syntactic analysis of a sizable corpus (approx. 2.000 words).
- rules out ungrammatical sentences,

- allows the formulation and verification of hypotheses which do not over- or under-generate, and
- generates hypotheses. The hypothesis about the type of mixed dependency relations English heads predominantly enter, for example, is based on the findings about dependency distance.

The most important conclusion to be drawn from section 6.3.3 is fundamental to syntactic code-mixing research. If syntax were irrelevant to code-switching¹, there would be no point in studying it. But it is, otherwise we would have found a chance relationship between syntactic relations on the one hand, and adjacency on the other. Syntactically related words are more likely to be in the same language when they are also adjacent. The set of findings for monolingual dependencies from this section show that, as far as distance is concerned, my informants' grammars match the properties of German and English. That is, most syntactically related English words are also adjacent, whereas most German words are involved in longer-distance dependencies. This is thought to be caused by the more frequent changes in dependency directions due to the clause final positioning of many German main verbs. This section furthermore illustrates that we cannot necessarily base assumptions about mixed dependencies on the properties of monolingual ones. The mean distance of mixed dependencies with an English head, for example, is much longer than the mean distance of monolingual English ones. This finding has been interpreted as showing that more distant words have less influence on each other's language. In other words, greater distance seems to increase the chances of code-switching. This finding furthermore supports the importance of peripherality as a factor facilitating code-mixing (Treffers-Daller 1994). The results for mixed dependencies have generated the hypotheses

- that the syntactic relations German heads enter with English dependents are not very different to the ones they enter with same-language dependents
- English heads, on the other hand, seem to enter into 'looser' and – literally- more remote syntactic relations (e.g. adjuncts) with their German dependents.

The quantitative analysis of individual grammatical functions in section 6.4. reveals that my informants largely adhere to the rules of German and English, both in monolingual and mixed utterances. The null hypothesis, i.e. that each word in a syntactic dependency relation must satisfy the constraints imposed on it by its own language, is borne out with only a few exceptions. The only noteworthy exceptions are ungrammatically extraposed objects. The results from this section furthermore confirm what we hypothesized on the

basis of Section 6.3.3. German words act far more frequently as heads of mixed dependency relations than English words.

- German heads in mixed dependencies behave much like they do in monolingual ones. That is, with the exception of “borrowed” English noun complements, the types and tokens of syntactic relations German words enter with English dependents are not very different to the ones they enter with same language words. But we find a considerable number of very long-distance mixed post-adjuncts.
- When English words do function as heads of other language dependents, they predominantly enter into rather “loose” syntactic relationships with their German dependents, i.e. syntactic relations that are not essential for building sentence structures, like adjunction, extraction (and extraposition). These grammatical relations are also associated with long distances.

An overall comparison of monolingual versus mixed complements and adjuncts reveals that adjuncts are more easily switched than complements ($p = 0.009$). The results from this section therefore support the findings of Treffers-Daller (1994), Mahootian & Santorini (1996) and Muysken (2000), i.e. that code-switching is favored in adjoined and/or peripheral positions, and that German seems to act as a kind of base language, although the notion of a matrix language as suggested by some researchers (Joshi 1985 & Myers-Scotton 1993) is not tenable in the light of the data this thesis is based on.

For the qualitative analyses I deliberately chose two areas of syntax in which the two monolingual grammars involved in mixing differ: subordination and gender. The findings of the qualitative analyses (Chapter 7), however, point in the direction of a categorical equivalence (Muysken (2000) or congruence (Sebba 1998) approach to the syntax of code-switching.

Subordinate clauses are SOV in German but SVO in English. The analysis of this construction revealed that switches at clause boundaries are frequent in my corpus, as in many others. In the vast majority of cases, the conjunction is in the same language as its dependent verb and not the main clause verb. The conjunction that is often not in the language of the dependent verb is English *because*. The German causal clauses introduced by *because* furthermore display German main clause word order. The qualitative analysis at the syntax-pragmatics interface revealed that these (and 42% of monolingual German causal clauses introduced by *weil*) are non-restrictive and serve mainly epistemic functions. This result therefore verifies Boumans (1998: 121) hypothesis that “... foreign conjunctions do not trigger verb-final in Dutch and German clauses ... because they are used in functions that require main clause order.” The

quantitative figures on this construction type furthermore demonstrate that we **do** know enough about the relation between frequency distributions of at least one specific grammatical pattern in monolingual speech data and properties of the grammar to handle frequency in bilingual data, contrary to what Muysken's (2000: 29) claims. This result furthermore demonstrates that competent code-switchers identify exceptional cases of categorial equivalence at the syntax-pragmatics interface in order to facilitate switching.

English and German furthermore differ in that the former language has natural gender, whereas German maintained a fully fledged grammatical gender system which manifests itself in agreement. This enables us to study gender assignment to English nouns. Although the German gender system had long been thought to be arbitrary, Köpcke and Zubin (1996) identified several semantic, morphological and phonological regularities which they believe to be strong enough to guide gender acquisition. Accounting for the "gender" of borrowed English nouns with these gender assignment rules seems preferable to other approaches for three reasons. First, it is preferable from a theoretical point of view, as it does not assume that gender assignment to both native German and non-native words is arbitrary. Second, it is methodologically preferable, as Köpcke and Zubin's (1996) assignment rules can be verified more objectively than specific assignment rules proposed for borrowed nouns. Third, it is in keeping with the null hypothesis approach taken in this thesis. The analysis of English nouns that receive German grammatical gender in my corpus revealed that the gender assignment rules identified by Köpcke and Zubin (1996) account at least as well for the cases studied as specific assignment rules proposed for borrowed nouns. Again it is the gender assignment rules that are **shared** by both languages that account for most of the mixed examples. In other words, in cases of categorial non-equivalence (Muysken 2000), like grammatical gender versus natural gender, competent bilinguals seek out the closest possible match between the their two linguistic systems and use these congruence (Sebba 1989) sites/strategies for code-switching.

The analysis of the German/English monolingual and code-mixed sentences/utterances thus confirm the findings of earlier research in some instances, while in others they are different. The important role homophonous diamorphs, cognates and "flagging" devices play in mixed utterances has been confirmed. The analysis furthermore supports certain earlier constraints in a probabilistic way, i.e. the equivalence and the subcategorization constraints, both of which are similar to the null hypothesis this thesis is based on, i.e. that each word in a syntactic dependency relation must satisfy the constraints imposed

on it by its own language. This research furthermore confirms that certain word classes and syntactic function are more easily switched than others. In particular, it supports that nouns are clearly at the top of the borrowability hierarchy, and that objects, for example, are more easily switched than subjects. Distance clearly plays a role in code-switching: syntactically related words are significantly more often in the same language when they are adjacent, and more distant words have less influence on each other's language. This finding supports previous research which has found that code-switching is favoured in adjoined and peripheral positions. On the other hand, the notion of a matrix language, and all versions of the free morpheme constraints are not tenable in the light of my data. Syntactic research on bilingual data, however, clearly seems to require a probabilistic perspective as typological differences in languages involved in code-switching and social and psycholinguistic factors (bilingual proficiency, for example) cause variation.

In this thesis have been able to show that (cf. Garnder-Chloros & Edwards 2004)

- my informants have two identifiable linguistic systems or languages, each with its identifiable grammatical rules and lexicon
- code-switched sentences result from the interaction between words and grammatical rules from these languages.

Code-switching, furthermore, is predictable to a certain extent: in these data, for example, German words are more likely to have another language dependent than English words, adjuncts are more frequently switched than complements and objects are more frequently switched than subjects.

The most important finding of this thesis, however, is that although it

- uses a methodology that has hitherto not been employed at in this research area at this scale, i.e. the LIDES transcription system, and
- a syntactic model that has also not been applied to data of this kind before,

it supports three of the four² “primitives” of code-switching that have been identified by Muysken (2000)

- the favourable influence of equivalent surface word orders
- the facilitating influence of categorical equivalence, and that
- code-switching is favoured in adjoined and peripheral positions.

¹ For a paper presenting the view that grammar can not provide definitive answers to code-switching research and that this research paradigm should focus on the variability of bilingual grammars, see Gardner-Chloros & Edwards (2004). I largely concur with the two authors, but tried to show in this theses that it is possible to find patterns in variation.

² The fourth one, i.e. the role functional categories play in code-switching cannot be tested as WG does not recognise functional categories.

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Appendix II: Tables for section 6.4.

Tables for section 6.4.1.

Comparison between monolingual German and English

	c	s	a	r	o	>x	x<	n	p	Total
G	155	187	186	84	91	3	19	21	9	754
E	130	137	116	93	82	1	3	26	8	596

Table 37. Monolingual functions (sample corpus), ignoring position: raw numbers

	c	s	a	r	o	>x	x<	n	p	Total
G	21%	25%	25%	11%	12%	0%	3%	3%	1%	100%
E	22%	23%	19%	16%	14%	0%	0%	4%	1%	100%
p	0.57	0.58	0.023	0.016	0.994	0.405	0.004	0.116	0.497	

Table 38. Monolingual functions, ignoring position: row percentages and p-values (significant differences in bold)

	>c	s<	>s	>a	a<	>r	r<	>o	o<	>x	x<	>n	n<	>p	p<	Total
German	155	142	45	100	86	69	15	54	36	3	19	15	6	1	8	754
English	130	130	7	72	44	93	0	82	0	1	3	26	0	8	0	596

Table 39. Monolingual functions differentiated by position, raw figures

	>c	s<	>s	>a	a<	>r	r<	>o	o<	>x	x<	>n	n<	>p	p<	Total
German	21%	19%	6%	13%	11%	9%	2%	7%	5%	-	3%	2%	1%	-	1%	100
English	22%	22%	1%	12%	7%	16%	0%	14%	0%	-	1%	4%	0%	1%	0%	100
P	0.575	0.588	0.518	0.013	0.000	0.000	0.000	0.000	0.000	0.405	0.004	0.009	0.000	0.497		

Table 40. Monolingual function differentiated by position: row percentages and p-values (significant differences in bold)

	>c	s<	>s	>a	a<	>r	r<	>o	o<	>x	x<	>n	n<	>p	p<	total
Mean _G	0.65	0.54	0.07	1.1	0.37	1.64	0.07	0.78	0.83	-	2.16	0.33	0	-	0	0.73
Mean _E	0.22	0.07	-	1.26	0.38	0.53	-	0.5	-	-	0	0	-	-	-	0.4

Table 41. Mean distances of monolingual functions

Tables for section 6.4.2.

Comparison of monolingual and mixed dependencies with a same-language head

6.4.2.1. Monolingual German and mixed with head German

	c	s	a	r	o	>x	x<	n	p	Total
G	155	187	186	84	90	3	19	21	9	754
H _G	309	12	65	68	49	3	14	3	0	525

Table 42. Functions in German and head German (h_G), ignoring position: raw figures

	c	s	A	r	o	>x	x<	n	p	Total
G	21%	25%	25%	11%	12%	0%	3%	3%	1%	100%
H _G	59%	2%	12%	13%	9%	0%	3%	1%	0%	100%
p	0.000	0.000	0.000	0.331	0.141	0.447	0.874	0.004	-	

Table 43. Functions in G and h_G, ignoring position: row percentages and p-values.

	>c	s<	>s	>a	a<	>r	r<	>o	o<	>x	x<	>n	n<	>p	p<	>f	Total
Mono G	155	142	45	100	86	69	15	54	36	3	19	15	6	1	8	0	754
Mix h _G	309	10	2	38	27	61	7	29	20	3	14	0	3	0	0	2	525

Table 44. Functions in G and h_G, differentiated by position: raw figures

	>c	s<	>s	>a	a<	>r	r<	>o	o<	>x	x<	>n	n<	>p	p<	Total
Mono G	21%	19%	6%	13%	11%	9%	2%	7%	5%	0%	3%	2%	1%	0%	1%	100%
Mix h _G	59%	2%	0%	7%	5%	12%	1%	6%	4%	0%	3%	0%	1%	0%	0%	100%
P	0.000	0.000	0.000	0.002	0.000	0.195	0.383	0.272	0.427	0.447	0.874	-	-	-	-	

Table 45. Functions in G and h_G, differentiated by position: row percentages and p-values

	>c	s<	>s	>a	a<	>r	r<	>o	o<	>x	x<	>n	n<	>f	total
German	0.65	0.54	0.07	1.1	0.37	1.64	0.07	0.78	0.83		2.16	0.33			0.73
Mix h _G	0.1	0.7	0.5	2.9	0.52	0.95	0.29	1.38	0.5	0.33	2.07		0.33	0.5	0.6

Table 46. Mean distances

6.4.2.2. Monolingual English and mixed with head English

	c	s	A	r	o	>x	x<	n	p	Total
E	130	137	116	93	82	1	3	26	8	596
h _E	45	11	55	7	18	7	15	3	0	165

Table 47. Functions in E and h_E, ignoring position: raw figures

	c	s	> a	a <	r	o	>x	x<	n	p	Total
E	22%	23%	12%	7%	16%	14%	0%	0%	4%	1%	100%
h _E	27%	7%	11%	22%	4%	11%	4%	8%	2%	0%	100%
p	0.249	0.000	0.713	0.000	0.001	0.397	0.000	0.000	0.000	-	

Table 48. Functions in E and h_E, differentiated by position: row percentages and p-values

	>c	s <	> a	a <	> r	> o	> x	x <	> n	Total
English	0.22	0.07	1.26	0.38	0.53	0.5	-	0	0	0.4
Mix h _E	0.84	0.9	1.33	0.78	2.12	0.18	0.45	3.5	-	1.05

Table 49. Mean distances

Tables for Section 6.4.3.

Comparison of mixed dependency relations

	c	s	A	r	o	>x	x<	n	Total
h_G	309	12	65	68	49	3	14	3	525
h_E	45	11	55	7	19	7	14	3	165

Table 50. Functions in h_G and h_E , ignoring position: raw figures

	c	s	> a	a<	r	o	>x	x<	n	total
h_G	59%	2%	7%	5%	13%	9%	0%	3%	1%	100%
h_E	27%	7%	11%	22%	4%	11%	4%	8%	2%	100%
P	0.000	0.006	0.132	0.000	0.002	0.551	0.001	0.001	0.000	

Table 51. Functions in h_G and h_E , row percentages and p-values.

	>c	s<	>s	>a	a<	>r	r<	>o	o<	>x	x<	>n	n<	>f	>e	total
Mix h_G	309	10	2	38	27	61	7	29	20	3	14	0	3	2	0	525
Mix h_E	45	11	0	18	37	7	0	18	*1	7	14	1	*2	0	1	165

Table 52. Functions in h_G and h_E , differentiated by position: raw figures and p-values

Tables for Section 6.5
Tests for Convergence

	>c	S <	> s	> a	a <	> r	r <	> o	o <	> x	x <	> n	n <	> p	p <	Total
Mono G	155	142	45	100	86	69	15	54	36	3	19	15	6	1	8	754
Mix h _E	45	11	0	18	37	7	0	18	0	7	14	1	2	0	0	165
P	0.058	0.000	0.001	0.413	0.000	0.038	0.000	0.105	0.004	0.000	0.000	0.187	0.436	0.82	0.202	0.82

Table 53. Monolingual German and mixed dependencies with an English head, raw figures and p-values, significant differences are in bold

	>c	S <	> s	> a	a <	> r	r <	> o	o <	> x	x <	> n	n <	> p	p <	Total
Mono E	130	137	0	72	44	93	0	82	0	1	3	26	0	8	0	596
Mix h _G	364	12	2	45	32	72	8	34	24	4	17	0	4	0	0	525
Prob.	0.000	0.000	-	0.057	0.397	0.38	0.002	0.000	0.021	0.149	0.001	0.000	0.048	-	-	-

Table 54. Monolingual English and mixed dependencies with a German head, raw figures and p-values, significant differences are in bold

	>c	S <	> s	> a	a <	> r	r <	> o	o <	> x	x <	> n	n <	> p	p <	Total
German	155	142	45	100	86	69	15	54	36	3	19	15	6	1	8	754
English	130	130	7	72	44	93	0	82	0	1	3	26	0	8	0	596
Prob	0.575	0.588		0.518	0.013	0.000	0.000	0.000	0.000	0.405	0.004	0.009	0.000	0.497		

Table 55. German and English monolingual dependencies, raw figures and p-values

Tables for section 6.6.
Comparison of word-classes

WC	Det	N	cN	pN	num	AJ	v	V	AV	cc	Sc	THAT	P	to	NOT	I	MP	Tot
G	57%	55%	42%	69%	33%	52%	53%	58%	70%	55%	62%	50%	43%	83%	48%	80%	100	56%
E	43%	45%	58%	31%	67%	48%	47%	42%	30%	45%	38%	50%	57%	92%	52%	20%	0%	44%
Tot	87	433	166	65	45	94	220	250	237	87	58	4	105	12	61	83	8	2025
Prob	.749	.775	.002	.027	.002	.463	.331	.903	.000	.904	.330	.815	.006	.001	.187	.000	.012	

Table 56. Distribution (%), total tokens and significant difference of German and English words by word-class in sample corpus

WC	Det	N	CN	pN	num	AJ	v	V	AV	cc	Sc	THAT	P	to	NOT	I	MP	Tot
G	4.4	21.2	6.2	3.9	1.3	4.3	10.3	12.9	14.6	4.3	3.2	-	3.9	-	2.6	5.8	0.7	100%
E	4.1	21.7	10.7	2.2	3.4	5	11.6	12.7	8	4.4	2.5	-	6.7	1.2	3.6	1.9	-	100%

Table 57¹. Word class constitutes % of all German and English words in sample corpus

¹ It would be interesting to compare the distribution of word classes in Emigranto German and English with monolingual German and English. This comparison, however, is not possible because of a lack of comparable tagged corpora.

Table for Section 6.7.

Syntactically unrelated discourse elements

	> AV	AV <	> DM	DM <	> I	I <	> T	T <	> X <	X [/] X	Total
German	1	2	3	17	22	74	17	8	2	26	172
English	10	9	0	20	7	20	25	19	3	16	129
	11	11	3	37	29	94	42	27	5	42	301

Table 58. C-Sed discourse elements that are syntactically unrelated to the remainder of the utterance

Appendix III: CHAT/LIDES Symbol Summary

- @Begin** marks the beginning of a file
- @End** marks the end of the file
- @ID:** code for a larger database
- @Participants:** lists actors in a file
- @Age of XXX:** marks a speaker's age
- @Birth of XXX:** shows date of birth of speaker
- @Coder:** people doing transcription and coding
- @Coding:** version of CHAT coding
- @Education of XXX:** indicates educational level of speaker
- @Filename:** shows name of file
- @Font:** sets the default font for the file
- @Group of XXX:** indicates the subject's group in group studies
- @Language:** the principal language of the transcript
- @Language of XXX:** language(s) spoken by a given participant
- @SES of XXX:** indicates socioeconomic status of speaker
- @Sex of XXX:** indicates gender of speaker
- @Stim:** indicates stimulus for elicited production
- @Transcriber:** gives the transcriber's name or initials
- @Warning:** marks defects in file
- @Activities:** component activities in the situation
- @Bg** and **@Bg:** begin gem
- @Bck:** backgrounding information
- @Comment:** comments
- @Date:** date of the interaction
- @Eg** and **@Eg:** end gem
- @g:** simple gems
- @Location:** geographical location of the interaction
- @New Episode:** point at which a new episode begins and old one ends
- @Room Layout:** configuration of furniture in room
- @Situation:** general atmosphere of the interaction
- @Tape Location:** footage markers from tape
- @Time Duration:** beginning and end times
- @Time Start:** beginning time
- @** special form markers

@2 English word or word-form
@4 German word or word-form
xxx unintelligible speech, not treated as a word
xx unintelligible speech, treated as a word
yyy unintelligible speech transcribed on %pho line, not treated as a word
yy unintelligible speech transcribed on %pho line, treated as a word
www untranscribed material
0 actions without speech
& phonological fragment
[?] best guess
() noncompletion of a word
0word omitted word
0*word ungrammatical omission
00word (grammatical) ellipsis
 - suffix marker
 # prefix marker
 + compound or rote form marker
 ~ clitic marker
 & fusion marker
 -0 omitted affix
 -0* incorrectly omitted affix
 . period
 ? question
 ! exclamation
 -? rising final contour
 -! final exclamation contour
 -. falling final contour
 -'. rise-fall final contour
 -,. fall-rise final contour
 -, level nonfinal contour
 -_ falling nonfinal contour
 - low level contour
 -' rising nonfinal contour
 , syntactic juncture
 ,, tag question
 # pause between words

- : previous word lengthened
- / stress
- // accented nucleus
- /// contrastive stress
- : lengthened syllable
- :: pause between syllables
- ^ blocking
- +... trailing off
- +..? trailing off of a question
- +!? question with exclamation
- +/. interruption
- +/? interruption of a question
- +//. self-interruption
- +//? self-interruption of a question
- +"/. quotation follows on next line
- +". quotation precedes
- + " quoted utterance follows
- +^ quick uptake
- +< "lazy" overlap marking
- +, self-completion
- ++ other-completion
- [c] clause delimiter
- %mov:"*_0_1073• time alignment marker
- [=! text] paralinguistics, prosodics
- [!] stressing
- [!!] contrastive stressing
- ["] quotation marks
- [= text] explanation
- [: text] replacement
- [0 text] omission
- [:=x text] translation
- [=? text] alternative transcription
- [%xxx: text] dependent tier on main line
- [% text] comment on main line
- [\$text] code on main tier
- [?] best guess

[>] overlap follows
[<] overlap precedes
<text> [<>] overlap follows and precedes
[>number][<number] overlap enumeration
[/] retracing without correction
word(*N) word repetition
[/] retracing with correction
[/]/ retracing with reformulation
[/-] false start without retracing
[/?] unclear retrace type
[*] error marking
[+ text] postcode
[+ bck] excluded utterance
[+ trn] included utterance